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FOOD RESOURCES OF NORTH ITALY

A description of the regional characteristics of the food-producing areas, of crop production, consumption, and distribution, together with recommendations for a United Nations' food program in the area

1 January 1944

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FOOD RESOURCES OF NORTH ITALY

A. Summary

1. North Italy as a whole is normally capable of feeding its population without imports from the rest of the country or from abroad. Generally speaking, interregional trade between the North and the central and southern areas adds to the variety rather than to the quantity of the diet.

2. There are, however, striking contrasts between the food resources and the degree of self-sufficiency of the five principal agricultural subregions. The Ligurian coast and the Istrian Peninsula are deficient in the major staple foodstuffs. The Po Plain, on the other hand, is one of the most productive agricultural regions of Europe, capable of feeding not only its entire urban population, but also exporting surpluses to the rest of the country and abroad.

3. In contrast with the rest of Italy, North Italian agriculture is characterized by a fairly intensive use of labor, fertilizer and machinery. Wheat, corn, rice, sugar beets, potatoes, vegetables and fruits are the principal crops. About 1.2 million hectares of the best land are irrigated, including all the acreage sown to rice. The area supports more than two-thirds of the cattle and half of the pigs raised in Italy.

4. In spite of the shortage of fertilizer, sprays and machinery, crop production, with the exception of some fruit and some truck crops, has not declined during the war. Meat production declined about 5 - 10 percent from 1936-38 through 1942, with the sharpest reduction in pork, while an increase occurred in the

production of rabbits and poultry. A further decline in meat production is anticipated for the current year. Fish production had declined 25 percent by 1942; a further sharp drop has probably taken place this year. The output of dairy products declined more than 20 percent, with the sharpest reduction in fluid milk.

5. North Italy has been the best-fed region of Italy, during as well as before the war. After allowing for waste and seed, feed and industrial uses, and losses in processing, an average of about 3,200 calories per day per capita is at present available for human consumption or export.

6. This figure, however, conceals striking differences in the level of consumption. It is estimated that in spite of official attempts at rationing self-suppliers, the average rural consumer has been able to maintain or even increase his pre-war consumption, which would give him at present more than 3,700 calories a day. The discrepancy between this figure and the 2,840 calories which, at a maximum, might have been legally retained by him on the basis of the self-suppliers' allowances in effect in March 1943 indicates the probable minimum extent of illegal retention of foodstuffs for farm-family consumption.

7. However, even after the self-suppliers' food requirements are satisfied to the fullest extent, as many as 2,750 calories per day were available for non-farm consumption or export. Of this amount, the foodstuffs subject to nationwide rationing supply about 2,230 calories; but not more than 1,400 calories per capita per day are distributed through legal rationing

channels. In other words, about 37 percent, in caloric terms, of the surplus of nationally-rationed foodstuffs remaining after the self-suppliers' food requirements are fully met are distributed by means other than the rationing system.

8. Even after allowance is made for net exports from North Italy, about one-third (some 700 calories per capita per day) of the supplies available for urban consumption of nationally-rationed foodstuffs does not move through legal channels. This discrepancy is probably higher for locally-rationed foodstuffs and for non-rationed commodities under price control.

9. "Hoarding," in the sense of building up reserves, probably accounts for only a small fraction of the discrepancy between the relatively satisfactory level of supplies available and the low level of the official rations. The bulk of this discrepancy undoubtedly reflects the extent of black-market transactions, including "black-feeding" leading up to black-marketing of livestock and livestock products; barter of rationed foodstuffs for industrial consumer goods or other foodstuffs; and "white-market" sales and gifts to relatives and friends.

10. Though most of these supplies reach the markets sooner or later, they contribute to a consumption pattern in which city dwellers who either have low incomes, or few contacts with farm areas, and, perhaps also, the rural population in specialized agricultural regions fare least well.

11. There is little basis for belief that the low level of rations has been necessitated by a shortage in facilities for the storage, transportation, processing,

and distribution of foodstuffs. Nor can it be explained by a lack of administrative attention given to the matter. The administrative organization set up to handle the collection and distribution of foodstuffs[1] was adjusted several times during the war period, and a broad rationing program was instituted.

12. The chief reason for the limitations placed on consumption lies in the inability of the government to enforce its elaborate schemes for the collection and distribution of surpluses. The rewards which would result from the use of more efficient methods of procurement by the Allied authorities are substantial.

13. The following recommendations are made for a United Nations food program in North Italy.

a. During an emergency period immediately following occupation whose duration will depend on the extent of the destruction of stocks, the availability of transportation facilities, the proximity of the next harvest, and other factors, the Allied authorities should be prepared to feed the entire urban population at a 2,000 calorie level. Care should be taken to distribute staple foods familiar to the inhabitants, with communal feeding taking an important place in the program.

b. The arrival of relief shipments in the urban areas and the whole program of emergency feeding should be well publicized to discourage hoarding and black-market distribution.

c. The distribution of foodstuffs, industrial consumer goods and farm producers' goods to farmers

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1. Described in detail in Section F, below.

should be tied at once to the program of food procurement. Wholesale-market facilities should be made available for barter transactions. Wherever possible, gold should also be used in mobilizing local supplies.

d. The effectiveness of relatively small supplies of industrial commodities to bring forth in return relatively large supplies of foodstuffswill depend on the degree of market control exercised by the Allied authorities. In particular, care should be taken to prevent Allied shipments from reaching the black market.

e. The system of price control and rationing should not be weakened but strengthened. A ration to provide at least 2,000 calories daily per urban inhabitant should be announced as soon as possible. However, no ration schedule should be set which cannot be met. Members of the United Nations forces should be instructed to respect the legal structure which the new government is attempting to maintain.

f. The legal flow of some basic foodstuffs from farms to urban markets should be encouraged by a system of subsidies and bonuses. Self-suppliers' rations should be eliminated; but use should be made of the existing machinery to collect surpluses over the farmers' own food requirements.

g. The existing organizations for the collection of agricultural surpluses should be restored to democratic control, at least on the local level. Persons known to have misused their responsibility by participation in corrupt practices should be dismissed and punished.

h. To obtain a basis for the collection of agricultural surpluses, the occupation authorities should immediately assemble all data recently collected on production and shipments of the 1943 crop, on livestock production, and on stocks in warehouses.

i. An effort should be made as soon as possible to prevent a decline in agricultural production in the next crop year. Imports of seeds, fertilizers, sprays, implements and repair parts and fuel should receive high priority. High priority should also be given to the repair and maintenance of irrigation installations, and of transportation facilities. The food shortage in the coastal deficit regions could be greatly alleviated if a larger number of the smaller fishing craft could be reassembled and reequipped.

j. The production program should be geared to wartime needs. Recent efforts toward increasing the degree of self-sufficiency will have to be continued for some time, with emphasis on crop production for direct human consumption rather than on livestock production.

B. Regional Characteristics

1. General. North Italy[1] (See map 1) is made up of five distinct agricultural regions -- the Alps, Northern Apennines, Ligurian Littoral, Istrian Peninsula, and Po Plain. They present striking contrasts in their natural vegetation, density of population, percentage of cultivated land, food resources, and in problems of food supply that will confront the Allied military government. (See maps 2-4).

North Italy has two major harvest seasons, which together cover a period of five months. (See Chart 1). Winter wheat, the major food crop of North Italy, is planted in the fall and harvested chiefly between the middle of June and the middle of July. In years of drought or of excessive cold, and normally on higher land, the wheat harvest extends into August. The other staple food crops, including rice, corn, potatoes, and fruit are planted between March and May and ripen in late summer and early fall, after the conclusion of the wheat harvest. Most of the crops are harvested between late June and mid-September.

Some crops depend wholly or partly on irrigation during the period from April to September. Any interruption of irrigation during this period would destroy the rice crop and reduce the production of fodder and corn which support the livestock and dairy industries, particularly on the Po Plain.

Agricultural holdings in the five regions are prevailingly small and owner-operated except in certain

1. Comprising the compartimenti of Piemonte, Liguria, Lombardia, Venezia Tridentina, Veneto, Venezia Giulia, and Emilia.

Chart 1. PLANTING AND HARVEST DATES OF PRINCIPAL CROPS -- NORTH ITALY

	January	February	March	April	May	June	July	August	September	October	November	December
Wheat						----------			==========	==========	==========	==========
Corn			==========				----------	----------	----------			
Rice			==========						----------	----------	----------	
Potatoes			==========				----------	----------	----------			
Sugar Beets			==========				----------	----------				
Grapes (vineyards)							----------	----------	----------			
Grapes (open field)									----------	----------		

Planting time: ==========
Harvest time: ----------

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parts of the Po Plain where centralized control is required for operation of large-scale irrigation or drainage works, and in the eastern Alps where cattle raising is the chief land use and the carrying capacity of the pastures is low. The average size of land holdings and types of land tenure by compartimenti are given in Tables 1 and 2. In eastern Veneto, large holdings are subdivided into small units, usually less than 5 hectares in size, operated by tenants who pay rental either in cash or in a combination of cash and shares of the crop. In the sugar beet lands of eastern Emilia, where the drainage and sedimentation projects were undertaken by large corporations, these corporations have retained control of the reclaimed land, the work being done by hired labor or share-croppers. The productivity of the sugar land contrasts strikingly with the poverty of the people.

In the irrigated area of southern Lombardia about half of the land is held in blocks of from 50 to more than 500 hectares, the larger blocks being subdivided into units, often 80 hectares or larger in size that are leased to share-renters for periods of from 9 to 12 years. This system known as the cascina, is limited to southern Lombardia. The renter runs the business, providing management and operating capital, and hiring labor. Large holdings of over 50 hectares also predominate in t the intensively cultivated, irrigated rice area of northeastern Piemonte and southwestern Lombardia. Instead of sub-letting, the owners operate the farms with the aid of permanent hired labor, supplemented by seasonal labor at the time of rice weeding and harvesting.

Although North Italy as a whole is essentially self-sufficient in staple foods during normal times, crop distribution and production is far from uniform and the degree of self-sufficiency varies greatly from one agricultural region to another. The Ligurian Littoral and the Istrian Peninsula have both urban and rural areas of marked food deficiency. The Alps and the Apennines with few large towns are, on the other hand, essentially self-sufficient. Although the Po Plain is one of the most productive agricultural regions of Europe, any break-down of its transport, processing, and distribution systems, at the time of the Allied invasion, would leave several of Italy's largest cities in a critical food supply situation, and might even create serious food problems among the rural population in the areas of highly specialized crop production.

2. The Po Plain.

a. General Characteristics. The Po Plain is the largest and most productive agricultural region of Italy. In addition to a large industrial population, it supports nearly one half of the agricultural population of Italy, with a rural density of 300 to the square mile. Of the total area of 16,000 square miles, nine-tenths is agricultural, and of this eight-tenths is sown. The region includes a fifth of the total wheat land of Italy, practically all of the rice, and nine-tenths of the sugar beet. Normally it contained 39 percent of the cattle of Italy and 34 percent of the swine.

b. Natural Conditions. The Po Plain occupies all of the land between the Alps and the Apennines. Spreading out from the foot of both mountain ranges is a smooth, gently

sloping surface of coarse, porous, droughty soils of inferior quality. Halfway between the Alps and the Po, this surface merges gradually into a lower plain with finer, moister, and more fertile soils. Immediately bordering the river and its northern tributaries are alluvial lowlands, fertile but so moist that diking and drainage have been required over large areas. This alluvial belt along the main river, narrow in the west and widening out towards the Adriatic, lies largely south of the Po. In the east, rivers from the Alps and the Apennines flow directly into the Adriatic Sea and their alluvial plains merge with that of the Po to form a broad crescent of swampy land, requiring drainage.

The river and the ground water regimes are the major factors determining where irrigation can be used to supplement the rainfall, which is inadequate during the summer. North of the Po, particularly in easter Piemonte and Lombardia, the river regime favors irrigation because the rivers are fed in summer by melting ice and snow and in many cases have their flow regulated by lakes. South of the Po, rivers are seasonal and provide a minimum amount of water for irrigation in summer. River irrigation on the Po Plain is supplemented by many springs and wells along the lower margin of the droughty higher plain. (See map 5.)

c. Land Use. The Po Plain is primarily a wheat, corn, and meadow region supporting large numbers of cattle and swine. (See map 6.) Corn and wheat together occupy 38 percent of the land, and another 31 percent is in meadow. In the plains portions of Piemonte, corn is practically lacking and wheat and meadows predominate. Farther east, corn production increases. Grapes, in mixed cultivation,

are grown throughout the Po Plain in areas that are neither irrigated nor naturally swampy. The major vine area, however, completely surrounds the plain, occupying the lower slopes of the Alps and Apennines and their foothills. (See map 7.)

The most intensively cultivated grain and meadow area lies in southern Lombardia and southwestern Veneto, in the lower zone of finer and more productive soils. Its yields of wheat, corn and fodder are the highest in Italy, due to irrigation, intensive cultivation, and heavy application of chemical fertilizer and animal manures. The large canals that provide water for local irrigation systems would be particularly vulnerable to adoption of a scorched earth policy. Their destruction would prevent year-round cultivation over large areas. Meadows that now provide five or more cuttings a year would be reduced to one or two, and the amount of fodder available would not support a livestock population comparable to that of the past.

In a few areas within the Po Plain the prevailing wheat-corn-meadow economy is supplemented or supplanted by highly specialized crops such as rice, sugar[1] fruits, or vegetables. Although these are important staple foods, overspecialization has in some areas resulted in deficiencies of other essential foods, creating a serious problem of food distribution. The most specialized, mechanized, and intensively cultivated region of Italy is the irrigated rice area of northeastern Piemonte and southwestern Lombardia. (See map 6.) Though producing practically all of the rice of Italy, its local supply of all other food elements is far from adequate.

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1. See Map 8.

Rice, however, is vitally dependent upon irrigation, and destruction of the major canals by evacuating Germans would practically preclude rice cultivation over large areas until the irrigation systems could be restored.

The recently reclaimed lagoon and moving sands area along the Adriatic near the city of Venezia have been developed into highly specialized truck farms, where three or four crops a year are grown. The area is small but is nevertheless a leading producer of practically all of the common garden vegetables, including cabbages, cauliflower, onions, garlic, and melons and cucumbers. Unless reclamation works are destroyed during the evacuation of North Italy, the nearness of this area to Venezia would greatly simplify the provisioning of the city.

The major vegetable-producing area in the Po Plain, however, is in northern Emilia. Practically all of the garden vegetables are produced in excess of the needs of the local population and, in normal times, made Emilia the most important canning region of North Italy. A small area in western Emilia around Parma and Piacenza alone produced one-fifth of all the tomatoes grown in Italy, a large portion of which were concentrated and canned for export. Northern Emilia also produces grain, meat, and dairy products in excess of local requirements. Except for livestock, a considerable part of which may have been slaughtered or driven off, it is probable that the area will continue to produce food surpluses because production is scattered and is not wholly dependent upon irrigation, and because, west of Bologna, there are no large industrial cities to be fed.

The parts of Piemonte lying within the Po Plain west of the rice region, are areas of general surplus second only to northern Emilia. Wheat and fodder are grown on the lower

land and the higher land produces surpluses of potatoes, cabbage, apples, and grapes.

3. The Northern Apennines. The northern Apennines, lying south of the Po Plain, are a broad range of rugged mountains some 170 miles long, rising to average elevations of 5,000 feet. Their more gradual northern slope varies from 20 to 75 miles in width from crest to foot, and is deeply cut by a series of long, narrow valleys extending for the most part in a NE-SW direction and opening out onto the Po Plain. Most of the sparse population lives in small settlements scattered along the main valley bottoms and in the northern foothills. Cultivation of grains, potatoes, mulberry, and vineyards is largely restricted to the lower valley slopes. The principal land use is grazing of sheep on mpuntain pastures. Scattered stands of chestnut in wooded areas are exploited as an important local source of food. Nearly all of the production is for home consumption and, although far from abundant, supplies practically all of the local needs for staple foods.

Although many sheep and cattle will undoubtedly be requisitioned, the scattered pattern of settlement, and the inadequacy of road and rail transportation will make it difficult for the Germans to deplete the region completely of its livestock. It can be assumed, therefore, that the population of the Apennines will remain practically self-sufficient and will present no serious food problems during the period of Allied occupation. It cannot, however, produce food in surplus to be used in other parts of North Italy.

4. The Ligurian Littoral. The Ligurian Littoral, comprising the steep southern slopes of the Northern Apennines below the elevation of 2,000 feet, extends for 140 miles along the Ligurian Sea from the French border to the

northern limits of Toscana. Between 1,000 and 2,000 feet is a strip of steep, terraced hill slopes devoted to vineyards, olive groves, and deciduous fruit production. Below 1,000 feet is a cliffed, indented coastal zone with small but important areas of intensive cultivation along the shore and on the delta flats of the larger rivers. The combination of part-time farming with fishing is common. Holdings are usually small. A surplus of out-of-season vegetables of high value but little bulk is produced in both open fields and hothouses. The numbers of sheep and cattle raised, never large, were on the decline during the years immediately before the war, and the small size of the agricultural areas precludes extensive grain and fodder production. The over-emphasis on the production of luxury crops for export makes both the urban and rural populations of Liguria almost completely dependent upon imports from the Po Plain, other parts of Italy, and even foreign countries for essential staple foods.

After Allied occupation, the Ligurian Littoral could probably continue to produce as large crops of field-grown vegetables as it did before the war, plus a small amount of additional food crops grown on land that was formerly devoted to commercial flower growing. Destruction of hothouses will probably have reduced the production of luxury crops. The fishing industry, badly disrupted by loss of fishing boats and tackle, could be partly restored in a short time, but at best the industry is too small to supply more than a small proportion of protein required locally. The few railroads leading north from Liguria which normally carry grain, meat, sugar and other foods to the region, and the main east-and-west coastal railway are highly vulnerable, especially the double-track line through the

Giovi Pass connecting Genoa (Genova) with the Po Plain.

5. The Alpine Region. The Italian Alps, stretching in a broad, 350-mile arc from the French Riviera to Yugoslavia, surround the Po Plain on the north and west and reach their greatest height at the northern boundary of Italy. The region is characterized by an alternation of high, rugged mountains and deep fertile valleys with steep slopes. The broad valley floors are usually covered with meadows or crop lands. On either side are wooded valley slopes, with scattered pasture. At higher altitudes the trees give way to bare rock surfaces or to alpine meadows that provide summer pasture for cattle and sheep.

The scattered and often isolated settlements are located on the valley floors and lower slopes, where small owner-operated farms provide the scant population with practically all of its food requirements, including wheat, rye, potatoes, kidney beans, wine, meat, and dairy products. In parts of the Alps, as in northern Veneto, subsistence farming gives way to dairy farming. Grain and fodder are normally imported for winter feeding of livestock and dairy products are exported. Potentially these areas could become practically self-sufficient (and may be so, by this time), but under such circumstances they would produce no surplus to export.

The feeding of the Alpine population during the period of Allied occupation will probably not present serious difficulties even though Axis forces may slaughter a considerable part of the livestock and attempt to leave as little as possible stored or hoarded produce.

6. Istria. The triangular peninsula of Istria, 60 miles long from north to south and 45 miles wide in the north, points southward into the Adriatic Sea between the Gulfs

of Trieste and Fiume. Most of the Peninsula is a rough block of limestone with canyons, and shallow, cliffed depressions, and without surface drainage. The thin, red clay soil, covered by juniper, thorn, and rocky pastures, supports crops and settlements only in the few scattered places where a natural water supply is available or where artificial reservoirs have been built. Sheep grazing is the dominant type of land utilization.

Cutting diagonally across the limestone block, from northwest to southeast, is a hilly, more fertile central zone underlain by sandstone, shale, and clay, where normal surface drainage prevails, and where corn, wheat, oats, barley, potatoes, legumes, grapes, and some tree crops are grown. In comparison with the dry limestone areas, the sandstone and shale belt is productive but is too small to grow enough food for the rural population and the cities of Trieste and Fiume, with populations of 250,000 and 54,000, respectively. The agricultural settlements of the sandstone belt are small and scattered, and are commonly located on hilltops.

Although Trieste, in the north; Rovigno, half way down the west coast; and Pola, at the tip of the Peninsula, are important fishing ports; the total catch is about equal to the local demand, with little surplus for export.

In the event of occupation, the local supply of staples other than fish would little more than feed the rural population. The provision of other food supplies for Trieste and Fiume will chiefly depend on water transport.

C. Food Production

1. Input.

a. Manpower. During the war, the shortage of agricultural manpower has been more acute in North Italy than in the southern part of the country. Even before the war, the available agricultural manpower was used more efficiently in the North than in the South. The increasing labor requirements of the war industries, the bulk of which are located in the North led to a stringency which was only partially alleviated by the mobilization of women and children and the release of soldiers for farm work. After the demobilization of the Italian army, the manpower problem is not expected to constitute a serious bottleneck in agricultural production.

b. Agricultural Machinery and Implements. Between two-thirds and three-fourths of the agricultural machinery of Italy is concentrated in the north-Italian compartimenti of Piemonte, Lombardia, Veneto, and Emilia (see Table 3). Of the 37,000 tractors registered in 1938,[1] 26,600 (72 percent) were found in the North.[2] About three-fourths of these tractors were of foreign (German and American) make. In the year 1937, there were 36,200 threshing machines in existence in Italy,[3] 64 percent of which were concentrated in the North. North Italy also accounted

1. According to Axis newspaper reports (Novo Hrvatska, Zagreb, 10/6/42), the number of tractors doubled between the end of 1939 (when it was reported as 36,305 for all Italy) and the end of 1941.
2. Of these, 13 percent were not in use.
3. Of which 1,000 were not in use.

for 80 percent of the corn-husking machines, of which there were 5,000 in operation in the country as a whole (1936). The number of stationary motors on North Italian farms was 16,500[1] (developing 229,000 hp.), of which 12,300 were internal-combustion engines. Borrowing and hiring of machinery and implements is customary.

There are no data on the number and quality of ploughs and other implements available on farms. In 1941, Italy was reported to have produced or reconditioned about 40,000 hand and motorized plows.[2]

In negotiations with Germany (1942-43), the Italians stressed the shortage of machinery as one of the weakest points in their agriculture. Annual requirements for tractors were given as 5,000. Most machines are old and need repair. No repair parts were available for machinery of American origin, and deliveries of spare parts and machinery by Germany were not forthcoming in sufficient quantity. The annual gasoline requirements of North Italian agriculture were about 79,000 metric tons (average 1936-38). In addition, about 19,000 metric tons of naphtha were consumed in 1938. During the war, an unspecified proportion of the gasoline motors were converted to gas obtained from wood and charcoal, and methane.

c. Fertilizer and Sprays. The use of chemical fertilizer in North Italy is much more intensive than

1. 58 percent of total for Italy.
2. Pariser Zeitung, 3/1/43.

in the South. Although only one-third of the total cultivated land of the kingdom is located in the North, the North accounts for 57 percent of the total Italian consumption of phosphoric oxide, 65 percent of the Italian consumption of pure nitrogen, and 88 percent of the pure-potash consumption (see Table 4).

The annual average consumption of pure plant foods in North Italy during 1936-1940 was as follows:[1]

Phosphoric oxide	158,000 metric tons, or 32 kg. per hectare of tilled land
Pure nitrogen	81,000 metric tons, or 16 kg. per hectare of tilled land
Pure potash	17,000 metric tons, or 3.4 kg. per hectare of tilled land

The abnormally low consumption of potash salts is due to high cost of land transportation from the mines of Germany or Alsace. During the war, about 5,000 metric tons of potash were obtained from Spain in exchange for a similar amount of nitrogenous fertilizer produced in Italy. Italian phosphate requirements for the production of superphosphate were supplied almost entirely by imports of phosphate rock from French North Africa and Egypt. Domestic production of sulphuric acid used in the manufacture of superphosphates is ample. Owing to the small size of the steel industry, basic slag is practically unavailable as a source of phosphoric oxide (see Table 5). Nitrogenous fertilizer requirements were approximately covered by domestic production. The total average consumption per annum of North Italy during the period 1936-1940 consisted of the following preparations;

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1. For geographical distribution, see Maps 12, 13,14.

Ammonium sulphate	150,000 metric tons
Cyanamide of calcium	131,000 metric tons
Calcium nitrate	82,000 metric tons
Nitrate of soda[1]	34,000 metric tons
Nitrate of ammonia	19,000 metric tons

In addition, small quantities of ammonium phosphate, a composite fertilizer, were used (9,000 metric tons). In 1943, Italy was cut off from its sources of phosphate. However, owing to the delayed action of phosphates over a period of years, in many types of soil, the deteriorating effect on crop yields may not be immediate. The production of nitrogenous fertilizer was reported to have declined owing to a shortage of electric power and because of an increased industrial demand for nitrates, and in 1942 farmers were rationed to 80 percent of pre-war consumption.

Because of the importance of fruit and truck crops, insecticides and fungicides occupy a strategic position in North Italian agriculture. The annual average consumption of plant sprays is shown in Table 6. The most important plant spray is copper sulphate, large quantities of which are used in the vineyards. Before the war, about 64,000 metric tons of this fungicide were consumed annually in North Italy. Other important fungicides, in order of tonnage, are sulphur (14,500 metric tons), copper-sulphur (4,000 metric tons) and oxychloride of copper (3,300 metric tons).

d. Fodder. In peacetime, North Italy was self-sufficient with regard to its fodder supply (see map 6). Livestock was largely fed on farm-grown green fodder

1. Imported from Chile.

and hay, supplemented, on large farms, by relatively small quantities of grain, marigolds, turnips and oil cake. In the Po Plain, corn, offals from wheat milling, molasses, etc. were used as pig feed. During the war several factors contributed to reducing the feed supply. Severe drought in 1941 and 1942 caused reductions in the yield of grain and hay. The increase in the milling ratio from 70 to 88 percent led to a reduction in the supply of milling offals. Molasses was diverted from fodder to alcohol production. In 1942, the government ordered the plowing-up of nearly 200,000 hectares of grassland. Protein concentrates disappeared from the market. The use of substitute feed (potato peelings, bean and pea pods, leaves, horse chestnuts, nettles and seaweed) was of little help in alleviating the situation. The pressure on fodder supplies has so far brought only a slight reduction in livestock numbers, being partly absorbed by lighter feeding of the existing stock.

e. Irrigation. The climate of North Italy, with rains in spring and fall and long droughts in summer, makes irrigation important for the production of all summer crops. Rice in particular requires three months of continuous flooding. It is important to note that, in many instances, late crops and second crops (rice, corn or potatoes after wheat) can be raised only on irrigated land.

About 1,200,000 hectares of the best land in the Po Plain are irrigated. North of the Po, rivers supply three-quarters of the irrigation water, the remainder coming from wells and springs. The water is distributed through major canals to intricate local systems of

irrigation canals and ditches. In eastern Piemonte the summer flow of the rivers is lower, and well and spring irrigation are relatively more important. To the south of the Po, in Emilia, springs and wells form the chief source of irrigation water, and the area irrigated is much smaller than north of the Po.

Irrigation is most important from April to September. Every effort, therefore, should be made to see that by early spring wells are flowing normally, main irrigation canals are in repair, and that local irrigation systems and installations are in condition to operate efficiently.

2. Output. North Italy as a whole is normally capable of feeding its population without imports from the rest of the country or from abroad. With 47 percent of the population of Italy, it produces 52 percent of the total grain crop (including rice), 49 percent of the potatoes, 41 percent of the wine, 56 percent of the non-citrus fruit, and 36 percent of the tobacco. Inter-regional trade between the north and the central and southern areas adds to the variety rather than to the quantity of the diet available to the population. North Italy is somewhat deficient in wheat and normally dried legumes, fresh vegetables, olive oil, and citrus fruit are imported from the central and southern parts of the country. On the other hand, North Italy normally produces 75 percent of the Italian maize crop (two-thirds of this in Lombardia and Veneto) which is largely consumed in the North, where cornmeal plays an important role in the rural diet. Eastern Piemonte and western Lombardia account for practically all the

rice produced in Italy, and southern Veneto and eastern Emilia produce nearly seven-eighths of the Italian sugar beet crop. More than two-thirds of the cattle and one-half of the pigs are raised in the northern compartimenti, with the heaviest concentration in southern Lombardia and northern Emilia.

While North Italy could be approximately self-sufficient as a whole, this is not true of each of its major regions or compartimenti. The Ligurian and Adriatic coasts, in particular, are deficient in staple foodstuffs and depend on imports.

a. Crop production. In Table 7, the pre-war production of major crops in North Italy is shown by compartimenti, together with estimates for the crop years 1942 and 1943.[1]

i. Grain. Wheat is widely grown throughout the area, with heavy concentration in the Po Plain, and occupies about one-third of the total crop land.[2] More than 3,000,000 metric tons, amounting to two-fifths of the Italian wheat crop, is grown in the seven northern compartimenti. This, together with large supplies of corn and rice, should be sufficient to satisfy the essential grain requirements of the North Italian population. Of the total Italian corn crop, more than three-fourths is grown in the North. Before the war, nearly 60 percent of this was fed to livestock. There is reason to believe, however, that with wheat imports cut off, the percentage fed to livestock

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1. The pre-war figures are based on data given in the Annuario Statistico Italiano. Estimates for 1942 and 1943 are based on intelligence reports.
2. See Map 6.

has been reduced substantially in recent years. It is estimated that in the current crop year, only 25 percent of the total crop of 2,300,000 metric tons will be fed to livestock or used in industry; 6 percent must be allowed for seed and waste, leaving nearly 1,600,000 tons for human consumption. Before the war, some 760,000 metric tons of rice were grown in North Italy, almost all in a small irrigated part of northeastern Piemonte and southwestern Lombardia. This quantity was increased to about 820,000 tons in the early 1940's, but owing to a shortage of labor and fertilizer, production is believed to have declined to 800,000 tons in 1943. In addition, a small amount of rye for human consumption is produced in the mountain regions surrounding the plain.

ii. Potatoes.[1] 1,500,000 metric tons of potatoes were harvested in 1943, of which probably not more than 10 percent will be fed to livestock or put to industrial uses. (This will represent a substantial reduction from the pre-war figure of 25 percent.) After allowing for seed and waste, 1,000,000 metric tons will be available for human consumption.

iii. Sugar Beets.[1] The 1943 sugar beet crop is estimated at 3,200,000 metric tons, equal to last year's crop. It is probable, however, that last year's exceptionally high sugar content will not be duplicated. With a sugar content of 14 percent, and allowing for diversion of some 500,000 metric tons of beets to alcohol production, and for a loss of 5 percent in refining,

1. See Map 8.

359,000 metric tons will be available for human consumption. This will leave North Italy with a substantial surplus, after satisfying official rations and farm family consumption.

iv. Dried Legumes. Although the normal consumption of dried legumes in North Italy is not known precisely, it can safely be assumed that the small amount produced in the area (pre-war: 100,000 metric tons) is insufficient to satisfy the demand for this commodity. Substantial amounts are normally shipped in from the rest of the country and from abroad.

v. Wine. (See Map 7). Intelligence reports indicate a favorable grape harvest, promising 17,600,000 hectoliters of wine, or 88 liters per capita.

vi. Fats and Oils. North Italy is deficient in fats and oils, and large amounts of olive oil are normally shipped in from the South. About 22,000 metric tons of olive oil, 65,000 metric tons of lard and slaughter fat, and 36,000 metric tons of butter are currently produced in the area.

vii. Fresh Vegetables and Fruits. The current production of fresh vegetables is estimated at about 330,000 metric tons, or one-third of the total Italian production. The 1943 output of tomatoes is estimated at 357,000 metric tons. Both figures represent a slight decline from the pre-war level. The area produces about 600,000 metric tons of fresh fruit (including melons and watermelons), or more than 50 percent of the output of Italy as a whole. This represents a marked decline from the pre-war level of 730,000 metric tons.

b. Livestock and Poultry. (See Maps 9,10,and 11). The pre-war livestock position of North Italy is shown in Table 8. Except for cattle in the alpine districts, relative livestock numbers are low by Western European standards. There were roughly 5,400,000 head of cattle in the area. Roughly half of these were classified as milch cows. (As "milch cows" are defined all cows producing milk in excess of the needs of the calf. They are not necessarily specialized animals.) Dairying is of particular importance in the mountains and foothills north of the Po Plain, in the irrigated plains of southern Lombardia, in Emilia, and generally around the cities. Cattle for meat (much of this fat calves for veal) are raised particularly in Piemonte and Emilia, and cattle raising generally tends to be concentrated in the Po Plain and in areas removed from the larger cities. Most of the cattle are dual- or triple-purpose animals; roughly one-quarter to one-third of them is used for draft purposes. On some farms, cattle are kept chiefly as a source of power and manure, rather than of cash income. Hog-raising, largely on the Po Plain, represents the next-important livestock enterprise. Droughts in 1941 and 1942, reduction of the supply of milling offals and molasses available for feeding, the plowing-up of pasture land, and the cessation of oil cake imports led to a shortage of fodder, which has probably resulted first in lighter feeding, and secondly in a reduction in livestock numbers. As long as the results of the livestock census of 1942[1] are unknown, estimates

1. Another livestock census was ordered for July 1943. It is not known whether it has actually been carried out.

of the extent of the wartime reduction in numbers and live weight are necessarily highly uncertain. It is probable that for cattle the shortage of feed has resulted principally in a reduction in numbers. Hogs were normally fed to high slaughter weights, so that the pressure on the fodder supply could be absorbed by lighter feeding before a reduction in numbers became necessary. The resulting estimates of livestock products are shown in Table 9. In 1942, the output of beef and veal products was believed to have declined about 15 percent from the 1936-38 level. A more severe decline is believed to have occurred in the production of pork (mostly cured pork).[1] The meat and fat situation is aggravated by the cessation of imports. /Before the war, about 50,000 metric tons of beef (15 percent of the national consumption) and significant quantities of animal fats were imported into Italy from abroad./ On the other hand, market receipts in the principal cities[2] indicate an increase in legal marketings of rabbits, to which substantial black marketings must probably be added. It is also likely that in spite of the threat of severe penalties for the feeding of grain to poultry, a considerable amount of black feeding and black marketing of poultry has been going on. The available supplies of poultry and rabbits are therefore estimated to have increased substantially in comparison with 1936-1938, while a

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1. The 1942 estimates for beef and veal, pork, and mutton shown in Table 9 were made by MEW.
2. Neue Zürcher Zeitung, 1/27/43; Messaggero, 1/27/43.

moderate decline has taken place in egg production.[1] The total meat production of North Italy (including poultry and rabbits) is believed to have declined slightly, from 473,300 metric tons in 1936-1938 to about 445,000 metric tons in 1942. It is likely that a further decline has taken place in 1943.

c. Dairy Products. According to the most reliable estimates,[2] the total pre-war production of fluid milk in North Italy amounted to about 24,000,000 hectoliters, or 75 percent of the total for the kingdom. It is

1. This impression is confirmed by Axis newspaper reports (See Nachrichten für den Aussenhandel, 9/4/42, and Monatsberichte des Reichsnährstandes, 8/5/42.)
2. See CAD Handbook on Italy, Section 7, data by compartimenti. This figure checks approximately with data given in Il Sole, Milan, 1/21/43, and with an estimate by MEW. Another estimate by Barberi. ("Indagine Statistica Sulle Disponibilità Alimentari Della Popolazione Italiana," Annali di Statistica, Serie VII, Volume 5, Rome, 1939), adopted on page 20b of the CAD Handbook on Italy, Section 7, is as low as 14,500,000 hectoliters for all of Italy (average 1933-37). There is no indication in the Handbook of the reasons for the discrepancy between this lower estimate and the higher figure shown elsewhere in the Handbook. There can be little doubt, however, that the lower figure represents only a fraction of the fluid milk produced in Italy. An estimate of pre-war farm consumption of fluid milk in North Italy (see below) indicates that as much as 9,300,000 hectoliters of fluid milk may have been consumed on Northern farms. Even if this figure for farm consumption is somewhat too large owing to a lack of representativeness of the sample of farm families used in its derivation, it throws considerable doubt on the lower estimate (about 11,800,000 hectoliters for North Italy), since this would leave less than 3,000,000 hectoliters for non-farm consumption. On the other hand, if 9,300,000 hectoliters are deducted from the larger estimate of 24,000,000 hectoliters, this would leave about 15,000,000 hectoliters for pre-war non-farm consumption.

estimated that between 1936-38 and 1942, the production of fluid milk declined by about 28 percent.

In contrast with fluid-milk production, the various estimates of the production of butter and cheese agree closely with each other. It is estimated that butter production in North Italy declined from 45,000 metric tons in 1936-38 to 36,000 metric tons in 1942, and cheese production from 146,000 metric tons in 1936-38 to 136,000 metric tons in 1942.

d. Fish. Before the war, North Italy consumed well over 100,000 metric tons of fish annually, a substantial part of which was imported, chiefly from Norway and Iceland. Because of limited storage and transportation facilities, most of the total was consumed in the ports and larger inland cities. Milan's peacetime consumption averaged about 12 lbs. of fish annually per capita.

The war almost completely cut off imports and made the remoter domestic fishing grounds inaccessible. Almost all of the power-driven fishing boats, and many of the larger sailing craft have been requisitioned for wartime service and are scattered or destroyed. Consequently, the supply of fish available has been reduced at least 50 percent.

The pre-war annual catch out of North Italian ports, plus the production of inland fisheries, is estimated at 60,000 metric tons. This figure is thought to have declined to about 45,000 metric tons by 1942. The intensive bombing of port facilities in the current year may well have further aggravated the situation.

D. Food Balance

1. Supplies Available for Human Consumption. The supplies of staple foodstuffs potentially available for human consumption, are recapitulated in Table 10. It should be noted that these quantities represent net food production. No allowance is made for exports to other parts of the country or across the frontiers, or for imports into the area.

In most cases, intelligence information and newspaper reports enabled a production estimate for the current year (1943-44); where such information was lacking, estimates for the past year were used. Where possible, allowance is made for that part of the crop which is diverted to feed and industrial uses, used for seed, wasted or lost in milling or processing.[1] The net supplies which would be available for human consumption (or export) are shown in Column 8.

2. Food Consumption of Farm Families. It can safely be assumed that in spite of the official rationing of farm-family consumption, the Italian farmer has by and large been able to retain as much of his own produce as he wanted to consume. The official self-suppliers' allotments[2] are therefore far from being indicative of the actual level of food consumption on North Italian farms.

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1. The quantity of wine diverted to alcohol production is unknown.
2. See Table 11 and Section F, Paragraph 3.

There is reason to believe that the present level of food consumption on North Italian farms is not lower, and may possibly be even higher than before the war. It has been sustained by a relatively high level of agricultural production, as compared with the pre-war period, which was accompanied by a relatively low efficiency of governmental control. Economic incentives to sell foodstuffs on urban markets have greatly diminished owing to the scarcity of industrial goods that could be obtained in exchange, and owing to a lack of confidence in the stability of the currency.

An indication of the level and composition of the pre-war diet of North Italian farm families can be obtained from a special inquiry undertaken by the National Institute of Agricultural Economics.[1] The estimates derived from this inquiry are probably biased upward so far as the pre-war farm consumption is concerned,[2] but for the reasons indicated above, it is quite likely that they reflect approximately the level of food consumption on farms obtaining at the present time.

If this assumption is about correct, it would seem that the level and quality of farm food consumption in North Italy have been and continue to be high. The total and per capita consumption are shown in Table 10, columns 9 and 10. The nutritional value of the rural diet is discussed in Paragraph 5a, below.

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1. See Appendix 4 and Table 12.
2. See Appendix 4 and Table 12.

3. Supplies Available for Non-Farm Consumption. The supplies available for non-farm consumption (or export) are shown in Column 11 of Table 10. Dividing by the non-farm population (11,600,000) (column 12) and by 365 (column 13), an estimate is obtained of the daily per capita supplies potentially available for non-farm consumption.

4. Legal Consumption of Rationed Foodstuffs. This estimate is then compared with the national daily rations presently in effect which, it is assumed, the occupying authorities will certainly endeavor to honor. These rations cover only essential requirements for staple foodstuffs. In addition, a number of commodities are rationed locally.[1]

The national per capita rations are shown in Table 13, column 2 (in grams per day). Bread and flour, and pasta and rice are rationed differentially and the figures shown in the table represent weighted averages. The computation of these weighted average rations is shown in Table 14. The exact sizes of the consumer categories are unknown and had to be estimated. If these weights are about correct, the weighted average ration of bread and flour is nearly 40 percent higher than the normal-consumer ration, and that for pasta and rice 10 percent higher.

Furthermore, allowance must be made for ration-free distribution of foodstuffs by canteens. In Italy as a whole (February 1943), 1,000,000 workers were fed

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1. See Section F, paragraph 3.

1,500 grams of pasta, 200 grams of fat, 3,000 grams of potatoes (or 500 grams of beans) per month. This represents a total quantity of 18,000 metric tons of pasta, 2,400 metric tons of fats, and 36,000 metric tons of potatoes per annum. Eighty percent of this may be assumed to have been distributed in North Italy. Distributed over the total non-farm population of 11,600,000, this would constitute a supplementary daily ration of 5 grams of pasta, 0.7 grams of fat and oils, and 9 grams of potatoes. A further allowance may be made for ration-free meals given daily to some 2,000,000 school children, of whom about 1,000,000 are in North Italy. The total canteen distribution per capita per day is estimated at 10 grams of pasta, 1 gram of fats, 14 grams of potatoes (or pulses) and 5 grams of bread.

The national rations, thus adjusted, may be compared with the Basic Relief Ration[1] set up by OFRRO,[2] which is shown in column 3 of Table 13. The composition of the Basic Relief Ration is largely determined by considerations of shipping space, for it is intended for emergency distribution and not as a basis of longer-term rationing in Italy. Nevertheless, there is a surprising similarity with the ration provided under the present system, except that OFRRO provides for a greater amount of grain and flour, a considerable quantity of pulses[3] and, for obvious reasons, omits potatoes. Clearly, the distribution of pulses on the scale contemplated by OFRRO is justified in the emergency stage only, since it would involve considerable shipments into North Italy.

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1. OFRRO, Preliminary Draft of a Program for Relief Operations in Italy, 8 Sept. 1943.
2. Adjusted to take account of supplemental rations to expectant and nursing mothers.
3. Or soup or stew.

In the longer run, suitable substitutes can be found which would obviate the necessity of large-scale movements of foodstuffs.

5. Nutritional Value of Food Consumption. North Italy has been the best fed region of Italy, during as well as before the war. This judgment is substantiated by comparing the estimates of present nutritional standards of Northern farm families with estimates of the nutritional position of the average Italian farmer (see Table 15).

Certain differences in traditional dietaries exist among the various regions. In general the average northerner enjoys a more varied diet. While, like the rest of his countrymen, he eats a good deal of wheat bread, he supplements this with a relatively larger amount of corn and rice. Corn meal is an important item in the rural diet. It may be made into polenta or used for corn bread. Olive oil is not so important as in the South, lard and butter being more commonly used as fats. Meat and sugar consumption are greater than in the South. Recognition of these variations in food habits has been made under the wartime rationing system. Likewise it will be important for Allied officials to take them into consideration in setting up any new rationing program.

a. Farm-family Consumption. As stated previously, it has been assumed that the rural diet has been maintained at pre-war levels. Tables 12 and 15 show that the northern farmer is exceptionally well fed both in quantity and variety of foodstuffs consumed. Average daily food intake yields 3,775 calories, 120 grams of protein, 80 of fat and 600 of carbohydrates.

b. Non-Farm Consumption. The nutritive value of potential non-farm consumption is shown in Table 15, column 3. This does not necessarily represent the prevailing conditions in urban areas. The figures are based on the assumption that the entire production in the North is consumed in that region. All supplies not consumed by the rural areas are then distributed equally among urban dwellers. Such assumptions partially conceal the true picture.

The analysis of potential supplies shows that the average urban consumer might receive as high as 2,750 calories per day, while the weighted average of present rations as shown in Table 10 yields only about 1,400 calories. The difference between the two figures can be accounted for partly in terms of the caloric value of unrationed and locally rationed foods as well as in terms of the foodstuffs which go to the cities via the "black" and "white" markets. Furthermore, a certain proportion of the potential foodstuffs may not get to the cities. They may be hoarded, or exported from the region.

The average figure certainly hides huge differentials in the nutritive value of the daily diet of various groups of urban consumers. High food prices on the "black" market mean that a large percentage of the urban people cannot afford to buy any food other than rationed goods. How much extra food they receive through friends and relatives in the country is not known.

c. Potential Non-Farm Consumption and Its Relationship to Rations. As has been stated the OFRRO Basic Relief Ration is quite similar to the present ration, the actual differences having been outlined. The OFRRO

ration provides for 2,000 calories a day, as compared to 1,400 calories under the present rations, the difference being largely accounted for by the larger quantity of cereals included in the OFRRO ration. However, according to the estimates in this report the urban consumer, if all foodstuffs locally produced were distributed in the area, might receive as many as 2,750 calories per day. This possibility must be taken into account in setting up any emergency rationing system. In view of the high production indigenous to the region and of the relatively high standards of consumption, it may be necessary and advantageous to plan for a rationing system which is higher than that which prevailed under Fascist rule and above the OFRRO Basic Relief Ration. Reports show that the Germans have taken account of the morale factors involved in such changes by increasing the bread ration in German-occupied sections of Italy.

6. Food Balance after Meeting Rations. Table 10, column 16 shows the total quantities required to meet (A) the national rations, (B) the Basic Relief Ration. It appears that substantial surpluses of major foodstuffs should be available even after rations are fully satisfied. The net balance after rations are met is indicated in column 17. The available surpluses of grains (including rice) should approach 700,000 metric tons. Even if the occupying authorities chose to distribute the higher cereals ration recommended by OFRRO, North Italy would be left with a surplus of more than 200,000 metric tons. Also 132,000 metric tons of potatoes are estimated to be available after official rations are met. If the unrealistic assumption is made that the occupying authorities

endeavor to supply the quantity of pulses[1] specified in the Basic Relief Ration, 500,000 metric tons would have to be shipped into North Italy, most of this from abroad. The area is deficient in fats and oils, and at least 43,000 metric tons of olive oil would have to be shipped in from the South to meet the official ration. The supplies of meat and cheese are adequate to meet the ration if distribution problems are disregarded, leaving a surplus of 176,000 metric tons after rations are met. The area has a substantial surplus of sugar (235,000 metric tons after the official ration is set aside).

Any estimate of the position with regard to unrationed or locally rationed foodstuffs must be guided by the normal peace-time flow of commodities. Fresh vegetables and fruits were normally shipped into the area from central and southern Italy, particularly to Milan(Milano) which has a relatively narrow truck-crop belt.

In conclusion, it may be stated that the moderate wartime decline in agricultural production does not account for the drastic limitations placed on consumption. Even if farmers are supposed to be fed as well or better than before the war, substantial surpluses remain after the official rations for city consumers are fully met. There can be no doubt that the low level of rations has been necessitated chiefly by the inability of the government to collect these surpluses from the producers. The rewards which would result from more efficient methods of procurement by the Allied occupation authorities are substantial.

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1. Or soup and stew.

7. Emergency Rations. It may be necessary to plan on feeding the entire population of the large urban centers for the first two weeks following occupation. During this period, there may be almost no food available because of deliberate destruction or pilfering by retreating German armies and destruction of roads and transportation vehicles.

Table 16 shows that, in order to supply the entire population of cities with 50,000 inhabitants or more with 2,000 calories a day through the OFRRO Basic Relief Ration, it would be necessary to bring in 48,837 metric tons of foodstuffs during the first two weeks. If it were considered desirable to supply expectant and nursing mothers and children with OFRRO supplementary rations, an additional 4,688 tons would be required, or a total of 53,525 tons.

Although it is not suggested that transportation of these commodities take precedence over that of necessary military materials, it is argued that immediate provisioning of these amounts would have an immediate effect upon peasant hoarding and black market dealings and would make the problems of occupation less difficult. After the first two weeks, a survey of the local situation will show to what extent relief shipments can be reduced.

E. Facilities for Distribution and Processing

1. Quantities Distributed. In the light of the size of the area, the large population, and the small degree of dependence upon foreign production, foodstuffs in North Italy move relatively small distances. Although there is considerable transport of foodstuffs, this is probably smaller relative to production than is the case, for example in other countries of Western Europe. Partly this is due to the large proportion of the population directly dependent upon agriculture for its livelihood. Partly it is due to the fact that production of many of the basic foodstuffs is widespread. Although there are food distribution problems within the agricultural areas themselves (and indeed, many producing regions are deficit food areas, at least in some respects), the main tasks are the movement, allocation, and disposition among urban consumers (and export markets) of that part of the crop which leaves the farm. In pre-war years, this involved less than half the tonnage of food production.

2. Available Facilities. There is ample evidence that, on the whole, the existing facilities for storage, processing, transportation, and distribution have been adequate to assure the regular peacetime flow of foodstuff from the farms to urban markets. With the exception of possible occasional bottlenecks in transportation, this has also been true of the war period. Rather, the reduced flow of foodstuffs to urban markets suggests that there may have been considerable underutilization of storage, processing and distribution facilities during the war years. Moreover, minimum use

was, of course, made of the normal facilities, most of which are subject to government control, for the illegal distribution which was going on on a large scale.

a. Storage. Before the war, North Italy was provided with storage facilities in excess of its actual needs. The bulk of all storage facilities is used for grain, and in most part is specially adapted thereto. Total capacity is very large, and most of the large plants, which are concentrated in and near large cities, are equipped with railroad sidings. Cold storage facilities and space are concentrated particularly around Milan (Milano), and Genoa[1] (Genova). Smaller ice plants or ice plants combined with cold storage, however, are well distributed throughout North Italy, being located even in places as remote as Bolzano in the Alps of Venezia Tridentia, the Province of Aosta in Piemonte, and Pola at the southern point of the Istrian Peninsula. There are also storage facilities for cheese, sugar, wine, and many other goods.

Some destruction of grain elevators and removal of ice, manufacturing, and cold storage equipment by evacuating Germans may take place. Because of their size and inflammability, grain warehouses with their large supplies of stored food are highly vulnerable. Ice manufacturing equipment is not only removable but is in great demand within Germany. Makeshift solutions will have to be found in the emergency period until storage facilities are restored.

b. Processing. Under normal conditions, North Italy either is or could be practically self-sufficient in all processed foods, with the exception of edible oils.

1. See Map 15.

With less than half of Italy's population, this area produces about half the flour milled in the country and the major part of Italy's refined sugar. It also produces small surpluses of rice, cheese, wine, and canned goods, the last three of which are normally exported. It is probably self-sufficient in processed meat and the basic starch staple, alimentary paste (spaghetti, macaroni, etc.). The production of these and other important food processing industries is given by compartments in Table 17.[1] The distribution of this production by provinces is shown in maps 16 to 30, together with the locations of the more important plants.

Processing plants are usually of small or medium size, and are scattered throughout North Italy. The few large plants include flour mills, breweries, distilleries, and sugar refineries.

Much of the food processing is concentrated in and near the large cities. Milan (Milano), the largest city of North Italy, has the densest concentration of food processing industries of all types. The Province of Milano is a leading producer of flour, butter, cheese, beer, wine, alimentary paste, bread, biscuits, meat, and distillery products. The same situation, on a smaller scale, is repeated near Turin (Torino) and Alessandria, which like Milan lie in rich food-producing areas. Because Liguria has fewer raw materials, its processing industries are fewer in number and are located at the ports to which raw foods come by sea or rail. Genoa (Genova)

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1. The data shown in Table 17 are taken from the industrial census and do not necessarily cover all processing, especially that on farms.

is not only an important sugar refining center, but also has three large flour mills that alone produce nearly all of the flour milled in Liguria.

Supplementing these large urban concentrations, there are notable groupings of certain industries in smaller urban centers located within specialized food-producing districts. Most beet-sugar refineries are located, not in the large industrial centers, but in the smaller cities of eastern Emilia and southern Veneto, near the beet-producing area. Canneries and sausage plants are similarly located in northern Emilia, the chief vegetable and swine producing area of North Italy. In the same area there is also a marked concentration of butter and cheese plants, located chiefly around smaller cities like Modena.

War has brought with it drastic changes in the normal food-processing pattern, as a result of conversions, inability to replace worn-out machinery, and bomb damage. An increasing amount of molasses from sugar refineries, as well as equipment of wineries and distilleries, has been diverted to the manufacture of industrial alcohol, thus reducing the amount of sugar and alcoholic beverages available for human consumption. Lack of tinplate has restricted operations in the canning industry, and maintenance of equipment and allotment of lubricating oil and fuel to food-processing industries has been minimized in order to meet military needs. Large plants in the larger cities, and, to some extent, concentrations of smaller plants nearby have been subject to repeated bombings, and their aggregate capacities have probably been somewhat reduced.

For some time after withdrawal, small scattered plants will be the chief local source of processed foods, since the evacuating Germans will probably have destroyed

all larger plants. The plants that remain will be faced with a shortage of power, replacement parts, etc. Output can be supplemented by simpler methods of preserving food, such as drying or salting. To a limited extent, wheat and sugar beets may be processed at home with simple, home-made equipment.

c. Transportation. Transportation of food in North Italy is essentially a question of supplying the basic food needs of the large cities of Milan, Turin, Genoa, and Trieste, and the large industrial populations living in smaller cities and towns, particularly in Lombardia and Piemonte. Milan and its suburb of Monza, with a joint population in excess of 1,150,000, present the most difficult single problem. Despite the fact that Milan is in the center of important grain- and cattle-producing districts, normally it imports large quantities of meat, dairy products, fruit, and vegetables from considerable distances. In peacetimes, cattle are imported even from Hungary and Yugoslavia. Much the same situation prevails in other large inland cities. Normally the job of transporting food products to these cities is facilitated by the existence of a close network of roads and railroads.

Coastal cities, particularly in Istria and Liguria, depend also on water transportation for much of their food supply. This is particularly true of Genoa and La Spezia, separated from the Po Plain by the Apennines, and Trieste and Fiume, whose immediate hinterlands are incapable of producing enough to feed the cities. Venice (Venezia), on the other hand, is a focal point for railroads and roads of the Po Plain and, in addition, is well supplied with grain, meat, milk, and vegetables from its

immediate hinterland. Consequently, it is less dependent upon water transportation than are the other port cities, Venice is not well provided with storage and cold storage space, and supplies of fresh food are normally brought in daily by rail or truck.

War has greatly changed the normal transportation set-up. Shipping space, rolling stock, motor vehicles, and the small imported supply of fuel and lubricants have been largely requisitioned or diverted to essential purposes. Bombings have slowed down traffic at terminals and rail junctions. These and other factors have reduced the transport of foodstuffs in North Italy, both in bulk and in length of haul. Although rural and small urban communities have been forced thereby to achieve a greater degree of self-sufficiency, the larger cities must, of course, still be supplied primarily by their rural hinterlands, however restricted these may have become.

A critical situation may well arise with the disruption of transportation facilities to be expected if North Italy becomes a battle field or if the evacuating Germans employ the "scorched earth" policy. Railroads and highways will be demolished at many points; motor vehicles, rolling stock, and many draft animals will be removed or destroyed; and urban food, fuel and cold storage facilities will either be carried away or rendered useless.

During the first days after Allied occupation there will be complete dependence upon Italian or Allied military vehicles, and such pack animals and horse-drawn equipment as remain. Although some rail lines and highways, particularly in the Po Plain, can be repaired promptly, lack

of conveyances in which to transport the food will delay operation until such equipment can be moved in from southern and central Italy, or, failing that, be imported,

d. Wholesale and Retail Trade. Large wholesale market centers are normally organized and regulated by the local authorities. They are equipped with technical, administrative, hygienic, and statistical services. Apart from the organized wholesale market centers, there are numerous open markets where business is traditionally transacted without the limitations imposed by a more formal organization. The organized wholesale markets, by types, are located in the following cities:

Fish	Eggs and poultry	Cattle	Fruits and vegetables
Milan	Milan	Milan	Milan
Genoa	Genoa	Genoa	Genoa
Turin		Turin	Turin
Venice		Verona	Verona
		Bologna	Venice
			Chioggia

Retail trade in food products is carried on by regular business houses, by peddlers, consumers' cooperatives, the organization "La Provvida," and miscellaneous other sales outlets. The main business of the cooperatives takes place in Varese, Como, Trento, Bellemo, and Trieste.

F. Food Administration[1]

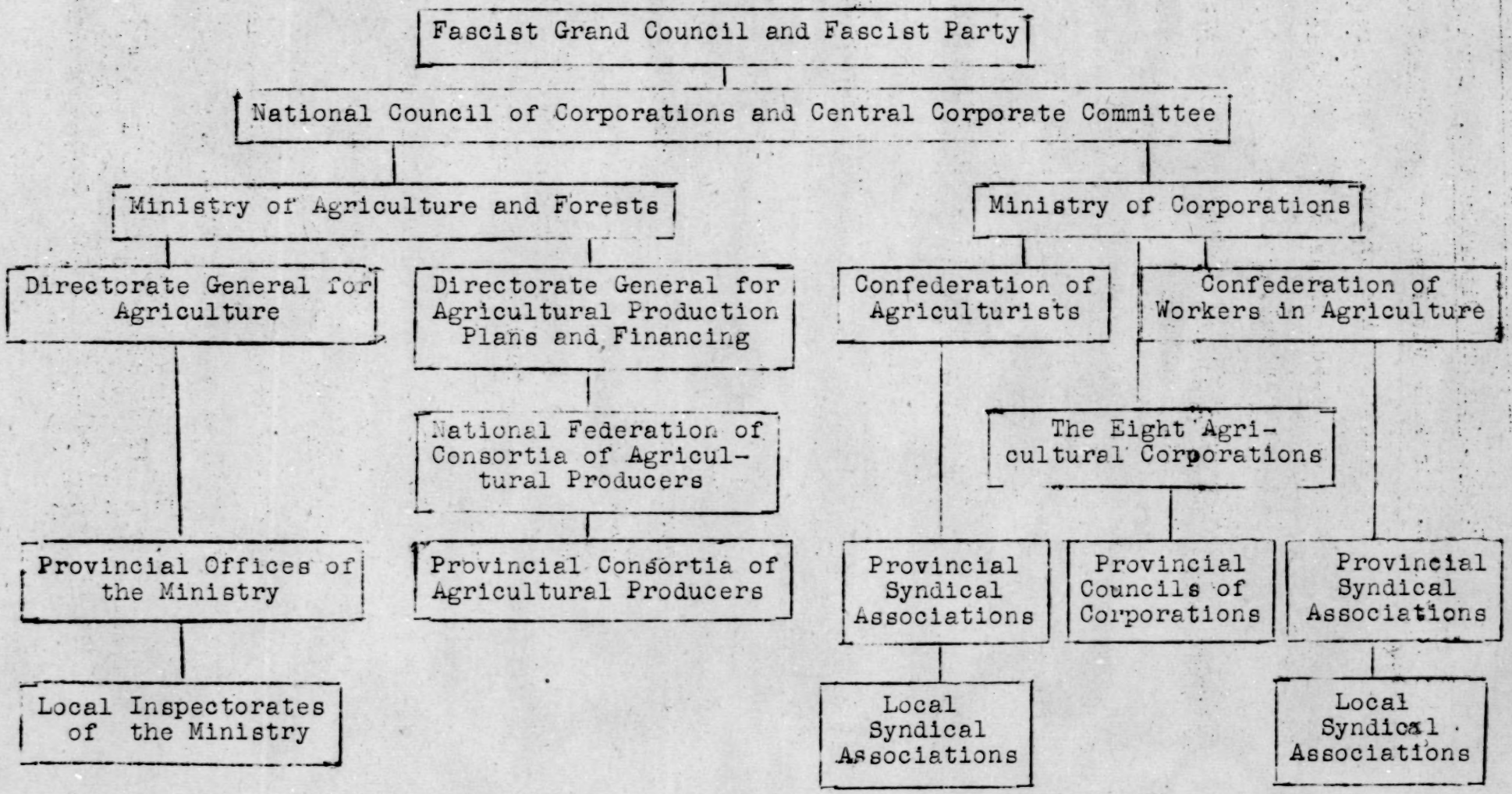
1. Administrative Organizations Concerned with Food Production and Distribution. During the twenty years of its rule the Fascist government developed a network of administrative organizations, regulatory bodies, and various associations of semi-public character in the field of agriculture. The effectiveness of agricultural organization, however, was not as great as the comprehensive nature of these various bodies and associations seems to indicate. Numerous regulations and functions of the administrative organizations were practiced only to the extent which seemed expedient; others were adhered to in different degrees in different parts of the country.

Agricultural production and distribution were under the jurisdiction of the Ministry of Agriculture and Forests, on the one hand, and of the Ministry of Corporations, on the other. The work of these Ministries was under the direction of the National Council of Corporations and the Central Corporate Committee. These bodies in turn were controlled by the Fascist Grand Council and the Fascist Party. (See Chart 2).

The authority of the Ministry of Agriculture and Forests was particularly weak on the provincial and local level. There were provincial offices of the Ministry as well as local inspectorates, but the work of the latter did not extend beyond the type of advisory function exercised by the extension service in the United States. The work of the Ministry of Agriculture was actually

1. The bulk of this section is reproduced from a report on "Food Distribution in Italy", prepared in the Agriculture and Standard of Living Section, Research and Analysis Branch, Office of Strategic Services (27 October 1943).

Chart 2. PRE-WAR ORGANIZATION OF FOOD COLLECTION AND DISTRIBUTION IN ITALY


Fascist Grand Council and Fascist Party
National Council of Corporations and Central Corporate Committee
Ministry of Agriculture and Forests
Ministry of Corporations
Directorate General for Agriculture
Directorate General for Agricultural Production Plans and Financing
Confederation of Agriculturists
Confederation of Workers in Agriculture
National Federation of Consortia of Agricultural Producers
The Eight Agricultural Corporations
Provincial Offices of the Ministry
Provincial Consortia of Agricultural Producers
Provincial Syndical Associations
Provincial Councils of Corporations
Provincial Syndical Associations
Local Inspectorates of the Ministry
Local Syndical Associations
Local Syndical Associations

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implemented by the activities of the (now defunct) agricultural consortia. Responsible to the Ministry was a National Federation of Consortia of Agricultural Producers and its Provincial Consortia of Agricultural Producers. In particular, these consortia were in charge of the transactions of the various pools (ammassi) to which agricultural products had to be delivered.[1]

The Ministry of Corporations was in charge of the Syndical Associations of Landowners, Tenants, and Agricultural Workers, and of the eight Agricultural Corporations (Husbandry, Grain, Sugar, Wine, Horticulture, Textiles, etc.). The main function of the Syndical Associations was the regulation of the relationships of their members, ie., landlord-tenant and operator-farm worker relations.

In view of the weakness of the organization of the Ministry of Agriculture on the provincial level, the Provincial Councils of Corporations took on increasing importance in the agricultural sector. They were equipped with Food Sections which, under the guidance of the provincial prefects, supervised and coordinated the provincial activities in the field of

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1. Originally, the agricultural consortia were chiefly engaged in the distribution of agricultural supplies (fertilizer, plant sprays, seed, feed, and agricultural machinery). In the 1930's the National Federation of Agricultural Consortia gradually became a quasi-public agency, assisting the government in the operation of compulsory pools and of marketing and dumping schemes. In 1942, the Federation was reported to operate 4,000 agencies throughout Italy, grain warehouses containing 16,000,000 quintals, 7,000 depots of pooled agricultural produce, 14 fertilizer factories, 19 feed factories, and 428 installations for the mechanical selection of seeds (National Councillor Eduardo Moroni, President of the Federation, 24 November 1942.)

food collection and distribution. Directives of the Ministry of Agriculture to the Food Sections had to pass through the provincial prefects. Since these Councils were more closely connected with the Ministry of Corporations than with the Ministry of Agriculture, there was thus a divided responsibility and a dualism of functions which became less tenable as regulations governing food collection and distribution became more stringent.

Under the impact of war conditions, coordination of the activities of the Ministry of Agriculture and the Ministry of Corporations on the national level proved necessary. To this end, an Interministerial Committee for the Procurement, Distribution, and Prices of Industrial and Agricultural Products and of Services (Comitato interministeriale di coordinamento per approvigionamento, distribuzione e prezzi dei prodotti industriali, agricoli e dei servizi) was established. It was composed of all influential ministers, the Secretary of the Fascist Party, and the Presidents of the Syndical and Corporative Organizations, and served as the policy-making body which coordinated the control over agricultural and industrial products. (This body was dissolved in August 1943).

On the provincial level, the Food Sections of the Provincial Corporate Councils were dissolved in 1942 and new Distribution Offices (Uffici distribuzioni) were established which were directly responsible to the central agricultural authorities. (In August 1943 the provincial organization was placed under the authority of the military Provincial Commissions). The Consortia

of Agricultural Producers, which operated both on a national and provincial level, under the direction of the Ministry of Agriculture and which, as already indicated, exercised some control over the various pools of foodstuffs (ammassi) were also dissolved in 1942. By that time their functions had gradually been taken over by agencies of the state. On the other hand, the Syndical Associations, which operated under the Ministry of Corporations, apparently assumed greater importance in 1942. The Syndical Associations of Landowners, Tenants, and Agricultural Workers, especially the Provincial Unions of these Associations, which used to operate in closest cooperation with the local branches of the party, were given increased powers in that year over the control of production and delivery. In the past their activity had in the main been limited to the consideration of questions pertaining to the relations of landowners, tenants and agricultural workers. Likewise, in the sphere of trade, the Provincial Unions of the Syndical Associations of Traders assumed greater authority.

On the local and municipal level, much reliance had always been placed on the Mayor (Podesta). In the fall of 1942 it proved necessary to establish Communal Food Commissions (Commissioni communali per alimentazioni) which were made up of the Mayor as president (serving as the representative of the Ministry of Agriculture), the Secretary of the local Fascio, the chief police officer, and the representative of the Syndical Association. The task of these bodies was not only to supervise the distribution of rationed

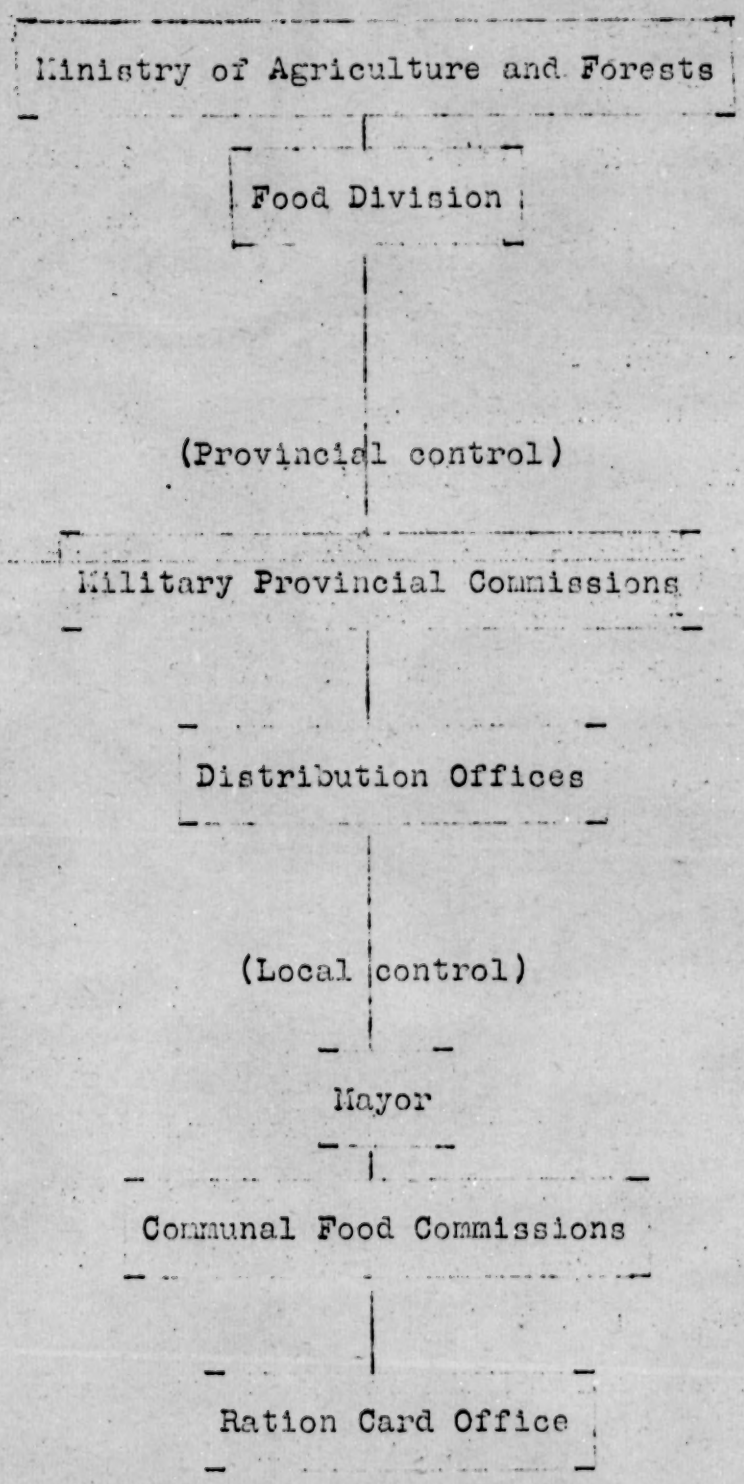
goods but to ensure that the peasants delivered their products according to schedule.

There is little information on the effectiveness of the control system under German military rule. It appears true that the system of food collection and distribution, which was operating under considerable strain during earlier months, continued to deteriorate in the fall of 1943.

The essential outlines of the administrative organization concerned with the collection and distribution of foodstuffs in the fall of 1943 are indicated in Chart 5. Their characteristics can be briefly summarized:

a. The Ministry of Agriculture and Forests, through its Food Section, or Bureau of Nutrition (Direzione generale dell' alimentazione), is in charge of rationing, stock-taking, freezing, and requisitioning of foodstuffs. It determines the food requirements of each province and distributes the available supplies among the various regions. No inter-provincial transportation of agricultural commodities may take place without the consent of the Food Section. It is also in charge of control over the food-processing industry, food exports (in cooperation with the Ministry of Foreign Trade), and food prices. The Bureau has established separate control offices for cereals and cereal derivatives, livestock and meat products, edible oils and fats, horticultural products and derivatives, fodder and straw, fish products and "colonial products" such as sugar, coffee, tea and cocoa. There are also functional subdivisions in charge of statistics, food processing,

Chart 3. PRESENT ORGANIZATION OF FOOD COLLECTION AND DISTRIBUTION IN ITALY



cheese, eggs, jams and marmalade, and sugar beets. Also, there were distribution organizations for flour and pasta, oil and fats, cheese, rice, and meat.

For cereals and cereal products, for example, the scheme operates roughly as follows: all wheat and corn (except producers' rations) must be delivered to the official pools. The distribution from the pools to the mills is made by the Cereals, Flour, and Alimentary Paste Distribution Office acting under orders from the Ministry of Agriculture and Forests. In the case of military assignments, however, eligible mills are designated by the Minister of War. The Cereals Office also regulates the distribution of flour and alimentary paste to individual provinces in accordance with quotas established by the Ministry of Agriculture and Forests. Once the products have been allotted to a province, distribution is handled by the regional Distribution Offices. Rice is handled similarly, through the Rice Distribution Organization. With respect to livestock and meat products, the producers must either deliver their products to the regional pools or notify the authorities of the livestock available for sale. Meat and meat products are distributed to the retailers in accordance with the rules established by the Ministry of Agriculture and Forests. Edible oils are subject to compulsory pooling, while the supply of fats is controlled in the form of compulsory reporting and sales supervision, the main difference being that fats, instead of being delivered to the pools, must be held by the producer at the disposition of the authorities. An Edible Oils and Fats Distribution Office handles the

distribution of these commodities to the various provinces. Within each province, distribution is carried out by the regional offices.

Effective 24 March 1941, all cream and butter produced from cow milk, goat milk, and buffalo milk had to be held at the disposal of the Ministry of Agriculture. The collection of cream and butter from the dairy farmers and the distribution of these commodities to the trade are controlled by the government. The control is exercised by the UDOGA (Ufficio distribuzione oli e grassi alimentari, or Distribution Office for Edible Oils and Fats) and the regional distribution offices. These latter offices are required to compile an inventory of all cream and butter under their control and to keep a complete register for the incoming and outgoing stocks based on the compulsory weekly declarations of the dairies. The Ministry authorizes certain manufacturers of dairy products and wholesalers who have adequate storage and distribution facilities to act as official butter producers, packers, and distributors for their respective districts. They operate under the group name of ditte assegnatarie (assignment firms) and are equivalent to the ammassi or official collection centers in use for other agricultural products subject to government control.

After Italy entered the war, the collecting system was supplemented by compulsory cultivation schemes. Under pressure of German experts, steps were taken in the winter of 1942-43 to establish procedures similar to the German farm-record and farm-inspection commissions. In the spring of 1943, an Office for

Agricultural Certification was created in every community as a district office of the National Association of Agricultural Organizations (Associazione nazionale degli enti economici dell' agricoltura). The work of these agencies was designed to result in greater exactness of farm records. They determine the place and time for the delivery of the produce. If surplus produce accumulates through excess amounts being allowed for the farmer's own use or through errors of calculation, the surplus must be turned in to the official collection centers. The purchase and sale of the amount of produce allotted to the farmer for his family's use and for cattle and other farm uses has been prohibited in order to eliminate — at least de jure — all black market operations. If the farmer does not accept the decision of the local office, he may appeal within five days after the notification to the local office, and request a final decision from the provincial authorities. Penalties are provided not only for failure to deliver products subject to government control, but also for refusal to furnish information needed for estimating the farmer's production.

By these various procedures, the agencies in charge of supplies attempt to keep exact account of the amount of produce delivered to the collection centers. The foodstuffs collected provide the main basis of urban consumption. Food rations are determined by the general policy section of the Bureau of Nutrition in the Ministry of Agriculture. Upon the approval by the Ministry of corporations, rations are promulgated in the form of ministerial decrees.

After a food ration has been decreed on a nation-wide basis, the Bureau establishes the corresponding provincial quotas. (The agencies operating on the provincial level have been discussed above.) On the communal level, the distribution of ration cards is carried out by the Ration-Card Office (Ufficio annonario) under the supervision of the Mayor (Podesta).

3. The Rationing System. In view of great variations in dietary habits, food rations vary from region to region. In the North, the diet resembles that of Western Europe with its relatively high consumption of meat, dairy products, sugar, and processed foods.

Bread, and apparently sugar and fats, are the only commodities rationed uniformly on a nation-wide basis. Rice and pasta are also rationed on a nation-wide basis, but the rations differ by regions. Fresh and preserved meat, cheese, eggs, and potatoes are rationed on a regional, usually provincial basis, with rations determined by the regional authorities. In some regions, milk, dried vegetables, fish, and wine are rationed, and in some localities even fresh fruit and vegetables. Coffee was rationed early in 1940 but has not been available since the summer of that year.

There are two types of food-rationing cards in use in Italy. One card is issued for commodities rationed on a nation-wide basis; the other for commodities rationed only in certain provinces. The first nation-wide food-rationing card was issued in January 1940; it was issued on a monthly basis. This period of validity was increased to three months in 1941, and to four months in July 1942. In the center or left-hand

corner, the ration card usually bears the name of the municipality and of the province of the bearer. The cards are numbered; name and address of the holder are filled in, and they are signed by the holder and stamped with the municipal seal. The main part of the card consists of small detachable squares, cedola di prelevamento, marked with the name of the commodity and the period of validity. Some of the ration coupons cover single-day or even half-day periods, others weekly, and still others bi-weekly periods.

On fixed days at the end of each month, every consumer registers with a grocer of his choice in order to be able to receive in the following month the supply of food covered by the ration card. The grocer detaches a special registration coupon, cedola di prenotazione, from the ration card and puts his stamp (name and address) on it. He stamps the last weekly ration coupon or the last two daily coupons of the month as a receipt for the cedola di prenotazione. There is one of these registration coupons per month for each rationed commodity.

With the exception of bread, rations are fixed on a monthly basis, but for the purpose of distribution the month is divided into bi-weekly periods. Coupons available for the second half of the month may not be used in the first half, but any coupon which has been left over from the first half is still valid throughout the rest of the month.

Bread is rationed on a daily basis. There are two coupons for each day, one of which may be taken in wheat or maize flour. The coupons are valid only for the day

specified but coupons for an earlier date of the same rationing period (month) may be used for the purchase of stale bread. In some places, the consumers are permitted to take the whole bread ration in flour for home baking. In this case, the ration is taken in four weekly periods.

If a consumer moves to another community, he may obtain from the new ration-card office a provisional food card for the remainder of the rationing period. Afterwards, he is supplied with a new regular ration card and registers with the grocer in the usual way.

Deliveries of supplies to the grocers are made every two months. The month-by-month system formerly used had resulted in occasional delays. In order to avoid the consequences of delays in shipments, grocers built up stocks on which they drew if the number of registered customers increased. The registration coupons detached by the grocer serve the authorities as a check on the number of his customers.

The second type of food-rationing card is issued for commodities rationed only in certain provinces. The value of the coupons varies considerably as between one area and another, mostly as a consequence of regional differences in supply and consumption. As a rule, the regional quotas are fixed by the provincial food offices which decide also on the rations of meat, cheese, etc. that the various consumer groups may buy.

Differential rationing, by age, occupation and other characteristics of consumers, has made considerable headway. There seems to be no clear-cut definition available as to what constitutes a "normal consumer,"

"light worker," "heavy worker," and "very heavy worker." The category of light workers is believed to include messengers, office boys, janitors, and watchmen. Civilian defense workers, members of the militia, and men belonging to militarized groups such as firemen, policemen, etc. are entitled to the heavy workers' ration. Very heavy workers include miners, salt miners, lumbermen, underground-construction workers, agricultural laborers and shepherds working in altitudes of more than 1,000 meters, and stevedores and porters carrying loads of more than 100 kilos. Expectant mothers receive a supplementary ration of bread from the fifth month of pregnancy. Men serving on merchant ships are allowed special rations when they are at sea. Harvest workers receive supplementary rations for the duration of their work. Workers in unhealthy occupations, such as those exposed to the risk of lead, mercury, silver, or arsenic poisoning, likewise receive extra rations. Special rations are also provided for sick persons. Thus patients suffering from tuberculosis and residing in mountain sanitariums receive a monthly extra allowance of 1,400 grams of sugar, 1,000 grams of fats or 1 litre of oil, and 2,000 grams of alimentary paste, rice, or corn flour. Tubercular patients in other medical institutions or living at home receive the following extra rations: 1,000 grams of sugar, 800 grams of fats or 0.8 litre of oil, and 1,500 grams of pasta, rice or corn flour. Sufferers from other diseases, including those afflicted with acute or pernicious anemia, malaria, certain intestinal inflammations and infections, hepatic ailments, diabetes, Addison's

disease, biliary and renal calculi, nephritic, sclerosis, gastric and duodenal ulcers, pulmonary abscesses, pleuritis and hemorrhagic disposition, are likewise entitled to extra allowances. These must, however, not exceed 800 grams of fat (or 0.8 litre of oil) and 100 grams of cereals (including pasta or mixed wheat flour, rice and corn flour).

a. Allowances for Farmers. Farmers are allowed to retain certain amounts of their produce for their own use. These allowances were determined as follows:[1]

i. Grain. Farmers must surrender ration coupons for bread and pasta. If they are owner-occupiers or tenant farmers, they may retain 185 kilos of wheat for each member of the family. Alternatively, for every 100 kilos of wheat, these may retain 130 kilos of rye, 150 kilos of barley, 175 kilos of maize, or 150 kilos of rice. Absent owners, who do not operate their farms, could retain 175 kilos of wheat (in 1942) for each member of the family. This figure was reduced to 110 kilos in 1943. Instead of wheat, they could retain proportionate amounts of other grains, as indicated above. As of May 1943 the following allowances were announced:

soft wheat	75 kg. per head
hard wheat	78 " "
rye.....	68 " "
barley....	56 " "
oats.....	42 " "

Whether the same system of alternatives still exists, i.e., whether other types of grains must be substituted for wheat, or whether allowances of other grains are in the form of additions to the wheat ration is not clear. Judging from the size of allowances, the latter would

1. Unless otherwise stated, allowances are those prevailing as of December 1942.

appear to be more likely.

ii. Producers of olives could retain 10 kilos of olive oil for each member of the family. If they are also entitled to slaughter a hog, this amount is reduced to 7.5 kilos. Persons engaged in the supervision of olive plantations may retain 7.5 kilos for each member of the family.

iii. Growers of rape and sunflowers may retain 2 kilos of edible oil for every 100 kilos of oil-seed delivered to the ammassi, but not more than 3 kilos for each member of the family.

iv. Potato growers may retain 120 kilos from the first crop (including 20 kilos for fodder); and 50 kilos from the second crop, for each member of the family.

v. Producers of dried vegetables, such as peas and beans, may retain 10 kilos from the first and 4 kilos from the second crop for each member of the family.

vi. Producers of almonds, hazelnuts, and walnuts may retain 80 kilos of nuts with shells or 40 kilos of shelled nuts for the whole family.

vii.. Producers of pistachio-nuts may retain 10 kilos of nuts with shells or 5 kilos shelled nuts for the whole family.

viii. Wine growers may retain 30 kilos of wine dregs with stalks or 25 kilos without stalks for each member of the family.

ix. Hog producers may slaughter one hog for every six members of a family or fraction of that number up to a maximum of four pigs.

When pigs are raised for hospitals, religious

communities, detachments of armed forces and similar institutions, one pig may be maintained for every six persons.

All who slaughter hogs must surrender ration cards for fats, butter, and pork fats for 12 months following the date of the slaughter. During the same period, they are not entitled to any ration of pork meat which is distributed to the civilian population.

x. In order to encourage the production of maize, farmers who grow a second crop on land which has already been cultivated under wheat, rye, barley, or oats, may retain the following amounts of maize for fodder: for each hog, 100-150 kilos of maize according to the type of hog; for each cow, 100 kilos; for each fowl, 2½ kilos.

Apart from the allowances for food and fodder, the following quantities of the principal crops could be retained as seed allowances (in kilos per hectare): early varieties of wheat, 200; late varieties of wheat, 180; rye, 160; barley, 160; oats, 150; maize, 60; rice, 180; beans, 120; potatoes, 1,500.

b. Meals in Restaurants. Rationing of food in restaurants was introduced at the end of 1940, when pasta and meat were in short supply. Since then restrictions have gradually become more severe. Beginning 1 October 1941, meals in restaurants were limited to three dishes and antipasto. Neither butter nor olive oil could be served separately. Prices for the meals were fixed and ranged from 6 lire in fourth-class restaurants to 32 lire in de luxe establishments. The standard meal consisted of soup, a major course consisting

of meat, fish, or eggs with garnishment, or a vegetable plate, and dessert. Instead of any one of the three dishes, cheese could be served.

The National Fascist Federation of Restaurants has issued the following instructions concerning meals served in restaurants: second helpings of hors d'oeuvres are prohibited. The dishes should be served fully seasoned. Neither oil nor butter or any other fat may be served separately. "Minestra," the typical vegetable soup, must be served without eggs. Bread (against coupon), minestra (against coupon if it is based on flour, rice, noodles, macaroni, etc.), vegetables, and salads may be served with every meal. For other dishes the following restrictions prevail: rabbits, game, fish, eggs, cheese, and entrails could not be served on Sundays, and on Saturday only for lunch. Poultry, ham, salt pork, and sausages could be served only on Monday and Tuesday and for lunch on Saturday. Beef and veal could be served only for lunch on Monday and Saturday. For dinner on Saturday, as well as for lunch and dinner on Sunday, a standard menu must be served consisting of minestra, one portion of vegetables or salad, one portion of fruit. All kinds of meat, fish, eggs, and cheese are excluded from these meals.

c. Communal Feeding. The importance of community kitchens has increased considerably in recent months. In January 1942, 260,000 persons were reported to be taking one chief meal a day at a community eating place in or near the factory or office building where they were working. In December 1942, 550,000 such meals had been served, and by the end of January 1943, a million

laborers and white-collar workers had come to use 3,500 community eating places. In recent months, numerous additional communal eating facilities have been created for the victims of air raids.

Since February 1943 ration cards need no longer be surrendered by the patrons of these eating places. For each customer served, the community kitchen is allowed the following quota of rationed foods: 1,300 grams of pasta, 200 grams of fat, and 3,000 grams of potatoes or 500 grams of beans. The kitchens also receive a fair share of the unrationed foods such as poultry and rabbits.

In addition to the free-coupon dishes, the community kitchens may serve complete meals upon surrender of the respective food coupons.

A scheme for the distribution of free meals for school children was introduced in December 1941. By the end of 1942, the number of children receiving free meals had risen to about 900,000. Of late, arrangements were made for the distribution of a warm lunch daily, coupon-free, to 2,000,000 school children.

G. Illegal Retention of Foodstuffs. In spite of the elaborate controls set up by the Fascist regime, the Italian war food administration has been conspicuous for its ineffectiveness. The attempt of the government to ration food producers to the self-suppliers' allowances,[1] must be considered a complete failure. Actually, it is believed that the average rural consumer has been able to maintain or increase his pre-war intake, which would give him more than 3,700 calories a day. The discrepancy between this figure and the 2,840 calories which, at a maximum, might have been legally retained by him on the basis of the self suppliers' rations in effect in March 1943[2] gives an idea of the probable minimum extent of illegal retention of foodstuffs for farm-family consumption.

But even after the self-suppliers' food requirements are thus satisfied to the fullest extent, as many as 2,750 calories per day were available for non-farm consumption or export. Of this amount, the foodstuffs rationed on a nation-wide basis supply about 2,230 calories; but not more than 1,400 calories per capita per day are rationed out through legal distribution channels. In other words, a significant part (about 37 percent in terms of caloric value) of the surplus of nationally rationed foodstuffs remaining after the self-suppliers' food requirements are fully met, are not distributed under the rationing system.

1. See section F-3.
2. See Table 11. It should be noted that the probable maximum legal retentions of self-suppliers are based on the self-suppliers' rations in effect in March 1943. These rations have been reduced in the meantime.

A certain proportion of the North Italian food supplies may have been shipped out of the region. Normally, rice, sugar, corn, potatoes, meat and dairy products leave the region. Some wine has recently been exported to Germany. On the other hand, considerable quantities of fruits, vegetables, olive oil, and other foodstuffs are normally imported. With movement of foodstuffs restricted owing to war conditions, net exports from the area probably do not exceed about 5 percent of the total output, that is about 160 calories per day per capita from all foodstuffs, or 130 calories from foodstuffs which are subject to nation-wide rationing. This still leaves 700 calories, or roughly one-third of the calories distributed in cities under national rations, unaccounted for. It is likely that for the locally rationed foodstuffs and non-rationed commodities under price control, this percentage is even higher.

It is thought that only a small fraction of this discrepancy between available supplies (after allowing for probable net exports) and legal marketings can be explained in terms of "hoarding" of foodstuffs (in the sense of building up reserves) on farms or in the trade. Although the shortage of consumers' goods and lack of faith in the monetary system may be conducive to the hoarding of grains and other staple foodstuffs, such hoards are difficult to conceal before the authorities. Moreover, all large-scale storage facilities are subject to tight governmental control. Another possible"leak" consists in the "black feeding" of grain and other staple foodstuffs to livestock, rabbits, and poultry. There can be no doubt ,

that this has taken place to a certain extent.[1] Black feeding would be particularly remunerative in rabbit and poultry raising, where numbers on farms are not readily controlled and where the end product can be disposed of in the black market with relative ease. This is also true, if to a lesser extent, of hog production.

There can be no doubt that "black feeding" leading up to "black marketing" of livestock and livestock products, rabbits, and poultry, and other illegal transactions, including barter of rationed foodstuffs for industrial consumer goods or other foodstuffs, and "white-market" sales and gifts to relatives and friends, account for the bulk of the discrepancy between the relatively satisfactory level of supplies available for non-farm consumption, and the low level of the official rations. These supplies reach the urban market sooner or later, but black-market prices and other circumstances result in an extremely inequitable distribution. The group suffering most under this system of distribution are city dwellers who either have low incomes, or few contacts with farm areas, and the rural population in specialized agricultural regions.

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1. In preparing Table 10, allowance was made for some illegal feeding before arriving at an estimate of the supplies available for human consumption. It may be, however, that the extent of "black feeding" is actually greater than that assumed in the table.

H. Recommendations for a United Nations' Food Program[2]

1. Emergency Relief. As a region is occupied military government should be prepared to feed the entire urban population[1] at a 2000 calorie level for a period of at least two weeks. During this period, the need for additional shipments may be determined by a spot survey of the situation in each locality.

During the period immediately after occupation while the city is still in confusion and disorder, the occupation authorities may distribute the food directly, through food lines, from army canteens stationed in various advantageous parts of the city (market places, city squares, large warehouses). If possible, ration coupons ought to be collected or noted, in order to prevent large-scale duplicate receipts. In fact, insofar as possible -- or better, after the first day or two -- the food could be sold.

Food distribution during these days might be in the form of complete rations packed to include a minimum, well-balanced diet. Care should be taken, however, not to distribute foods of a nature or in a form unfamiliar to the inhabitants. Great waste (and inadequate nourishment) would surely result. This has

1. Allowance will have to be made for any abnormal expansion of the urban population as a result of fighting in other areas.
2. The recommendations contained in this section differ in important respects from the AMG Proposed Scheme for the Reorganization of Agricultural Control in Italy dated 30 Sept. 1943. A critique of this proposed scheme is available upon request to the Research and Analysis Branch, Office of Strategic Services.

been recognized by OFRRO in setting up the Basic Relief Ration. There is much to be said for the direct distribution of flour, vegetables such as beans and peas, and some lard, and perhaps canned milk or milk powder for children. Such broad-scale communal feeding must be considered a short-period emergency measure, and even unbalanced diets of familiar commodities would be desirable.

The length of the emergency relief period will depend on the extent of the destruction, the availability of transportation facilities, etc. It is to be expected that rail transportation around large urban centers will be thoroughly disrupted and will not be restored for some time after occupation. Consequently, the Allied authorities will have to rely largely on motor transport and animal-drawn vehicles to supply foodstuffs to urban centers.

The size of the relief problem will also depend on the time of year in which occupation takes place. If given enough time for evacuation, the Germans may be depended on to remove or destroy a large part of the available stocks, so that the shortage of foodstuffs will be acute in the cities until the new(1944) harvest comes in.[1]

A prolonged stalemate along the line of the Po River, which roughly cuts off all North Italy except Emilia and Liguria, would probably result in greater dislocations north of the Po than in the rest of Italy.

1. See Section B for harvesting period.

The surpluses of Emilia move essentially northward, and cutting them off might necessitate restriction in food consumption in some of the larger northern cities. On the other hand, Liguria, which is ordinarily dependent on imports from Lombardia, Emilia, and Piemonte, would have to be provisioned from central Italy.

2. Mobilization of Area Supplies. The next problem to be met by the occupation authorities is that of restoring and increasing the legal flow of foodstuffs from farms to cities. A successful solution of this problem will not only alleviate the extent and intensity of the food-relief problem; it will also contribute materially to the restoration of a balanced economy in the occupied area.

A program to reduce illegal retention of foodstuffs must rely on a combination of economic, administrative and political measures.

a. The arrival of relief shipments in the urban areas and the whole program of emergency feeding should be well publicized in the cities and in the surrounding countryside. Evidence that food is available and that additional shipments are expected will discourage hoarding and reduce the demand for black-market goods.

b. After years of war and progressive inflation, most farmers lack faith in the monetary system, fear that no goods can be acquired with money, and will therefore be reluctant at first to surrender foodstuffs in exchange for money. They will, however, be willing to barter substantial quantities of foodstuffs in return for relatively small amounts of industrial goods. Wholesale

market facilities should be made available for this purpose. (To facilitate transactions, a point system may be devised for use in these markets. The latter may be used to replace or supplement the monetary transactions.) In general, the distribution of foodstuffs (sugar,etc.), of industrial consumer goods (household and yard goods) and of farm producers' goods (seeds, fertilizers, sprays, fuel, implements and repair parts to farmers should be tied at once to the program of food procurement. To many farmers, particularly the large-scale commercial farmers who are more frequent in North Italy than in the central or southern part of the country, gold will be a welcome exchange good. Gold should be used to the greatest possible extent, since it makes minimum demands upon shipping space.

c. The effectiveness of relatively small supplies of industrial commodities to bring forth in return relatively large supplies of foodstuffs will largely depend on the degree of market control exercised by the Allied authorities. In particular, care should be taken to prevent any part of the Allied shipments of foodstuffs, industrial consumer goods, and farm supplies from reaching the black market. Everything should be done to make sure that these goods reach the ultimate consumer through legal channels.

d. The chief safeguard against the black market lies in an effective system of rationing and price control. In spite of demands for relaxation of economic regulations which will undoubtedly be raised by various pressure groups under the guise of restoration of freedom, the system of price control and rationing should not be weakened but strengthened. A ration to provide at least 2,000 calories daily per urban inhabitant should

be announced as soon as possible. Any other course would lead to popular discontent and would therefore not be in the interest of a successful prosecution of the war.

As long as essential foodstuffs are scarce, differential rationing should be retained. In the poorer parts of the cities, in factories, and in schools, communal feeding facilities should be provided throughout the occupation period.

e. The above recommendation should, however, be qualified by the following consideration. In the beginning, the institution and effective operation of such a broad economic program devoted to the elimination of the black market will be very difficult. Administrative problems and a substantial amount of non-cooperation may be anticipated. It is important, on the other hand, that a system instituted by the United Nations occupation authorities work. This is particularly pertinent because the Italians are quite familiar with the long history of unsuccessful collection, rationing, and price control policies both of the Italians and, in recent months, of the Germans. Therefore, no rations should be set which cannot be met. If there are any doubts that the rations can be met, it would be preferable to set the rations at a low level and subsequently raise them, than to proceed in the reverse fashion.

f. It is most important that the members of the United Nations' forces respect the legal structure, particularly the price structure, which the new government is attempting to maintain. Reports from Sicily abound with indications of wide patronization of the black market by soldiers, particularly for such commodities as wine. While there are some advantages to purchase of real surplus goods by the occupying forces, these purchases must be made

at the official prices. This point is tied up in part with the relationship of distribution problems to broader fiscal problems. The more lire a dollar buys, the more difficult will it be to prevent American soldiers, in particular, from participating in such illegal dealings. Unless the native population is impressed with the fact that Allied troops and authorities will not countenance former practices, there can be little hope of establishing an efficient food distribution system.

g. The legal flow of some strategic foodstuffs from farms to urban centers may be further increased by a program of subsidies and/or changes in the structure of relative prices of farm products.

Bonuses for immediate delivery should be retained; but the practices of the old regime to continually extend the deadline date should not be imitated. Where price increases are necessary to increase production, these should be absorbed by subsidies. An effort should be made to keep down prices of essential foodstuffs to consumers.

h. The problem of increasing the legal flow of agricultural products from farm to market (and of reducing the extent of black market transactions) is, of course, closely tied up with the way in which the fiscal and monetary policies of the country are handled. It is to be anticipated that a substantial amount of excess purchasing power will continue to feed a potentially large black market.

i. The economic measures outlined above will call forth a substantial voluntary flow of foodstuffs from the farms to legal urban markets. However, in view of the scarcity of industrial goods which will undoubtedly continue for some time, and assuming a less than perfect solution of the fiscal problem, these immediate economic steps will have to be supplemented by political and propagandistic measures.

j. It is important that the economic program of the

Allied authorities be widely publicized through the radio, the press, and proclamation, in an attempt to convince the farm population and food dealers of the great probability that formerly scarce foodstuffs and other essential living items are now becoming available. Stressing the point that the new regulations are elements in the program of the new stable and popular government, concerned with the living standards of all its citizens, should also facilitate in alleviating the various inclinations for illegal retention.

k. The self-suppliers' rations should be eliminated as unenforceable. Wartime experience has shown that farmers will retain what they need despite legal restrictions. Therefore, continuance of such rations offers no positive advantage whereas their abolition may have psychological effects which will alleviate collection and distribution problems.

l. Use should be made so far as possible of the existing machinery for collection of agricultural surpluses. However, care should be taken to restore these organizations to democratic control, at least on the local level, and to facilitate changes in personnel wherever individuals in charge do not enjoy the confidence of the membership of the population at large. In particular, persons generally known to have misused their responsibility by participation in corrupt collection and black-market activities should be dismissed as soon as possible. If punishments must be meted out for particularly flagrant cases of corruption and black marketing, they should be severe and should be given full publicity.

m. To obtain a statistical basis for the collection of agricultural surpluses, the occupation authorities should immediately try to assemble all data recently collected

in North Italy on production and shipments of the 1943 crop. A census of agricultural land under cultivation was announced in late June 1943. Since its objective was to provide a basis for assessing compulsory quotas for delivery to collection depots, the material in some form is available in the statistics division of the Bureau of Nutrition, Ministry of Agriculture and Forests. A livestock census was taken in June 1943.

The combined impact of these economic, administrative, and political measures should bring about a substantial reduction in the extent of illegal marketing. Furthermore, these measures will undoubtedly cause a reduction in t the level of prices in the black market, which will in itself contribute to eliminating the existing inequities in the distribution of foodstuffs.

3. Agricultural Rehabilitation. An effort should be made immediately by the liberating authorities to prevent a decline in agricultural production in the next crop year. Without the intervention of the Allied authorities, such a decline might be brought about by several factors: (1) The Germans will have removed a substantial part of the agricultural machinery. (2) Yields will continue to decline owing to the exhaustion of the soil which in recent years has not received adequate amounts of fertilizer. (3) A shortage of sprays will endanger fruit and truck crops. (4) Seeds may be short in some regions. (5) The installations for the drainage and irrigation of more than a million hectares of the best land are highly vulnerable and may have been destroyed.

The shipment of seeds and fertilizers should receive high priority. If such shipments are made in time, they will save many times their weight in cereals in the

following year. In fact, because of the shipping shortage, imports of fertilizers may be justified to an extent which would be uneconomical in normal times. Therefore, North Italy should be provided with at least as much phosphate as was imported before the war, and efforts should be made to step up potash imports as well as domestic production of nitrogenous fertilizers. Copper sulphate and other sprays require relatively little shipping space but will probably be in short supply for some time to come. Supplies should be made available so far as this is practicable. High priority should be given to the repair and maintenance of ditches, canals, and pump installations.

In view of the present policy of the German Army authorities[1] it is unlikely that the Allies will find much removable agricultural machinery of types useful to the Germans. A census should be taken of the machines that may be available, to insure their efficient use through machine pools. Farmers in need of repair parts should be listed and repair parts for machines of American make should be given high priority. Fuel and lubricants, and small implements should also be made available at an early date. When imports of farm machinery become possible, it should preferably be made available through pools or machine and tractor stations, or rented on a custom basis, to insure maximum use.

The movement of foodstuffs and agricultural supplies deserves high priority on transportation facilities.

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1. For instance, orders were sent out on 27 September 1943 requisitioning all tractors and other motor vehicles in the Rome and Frosinone provinces.

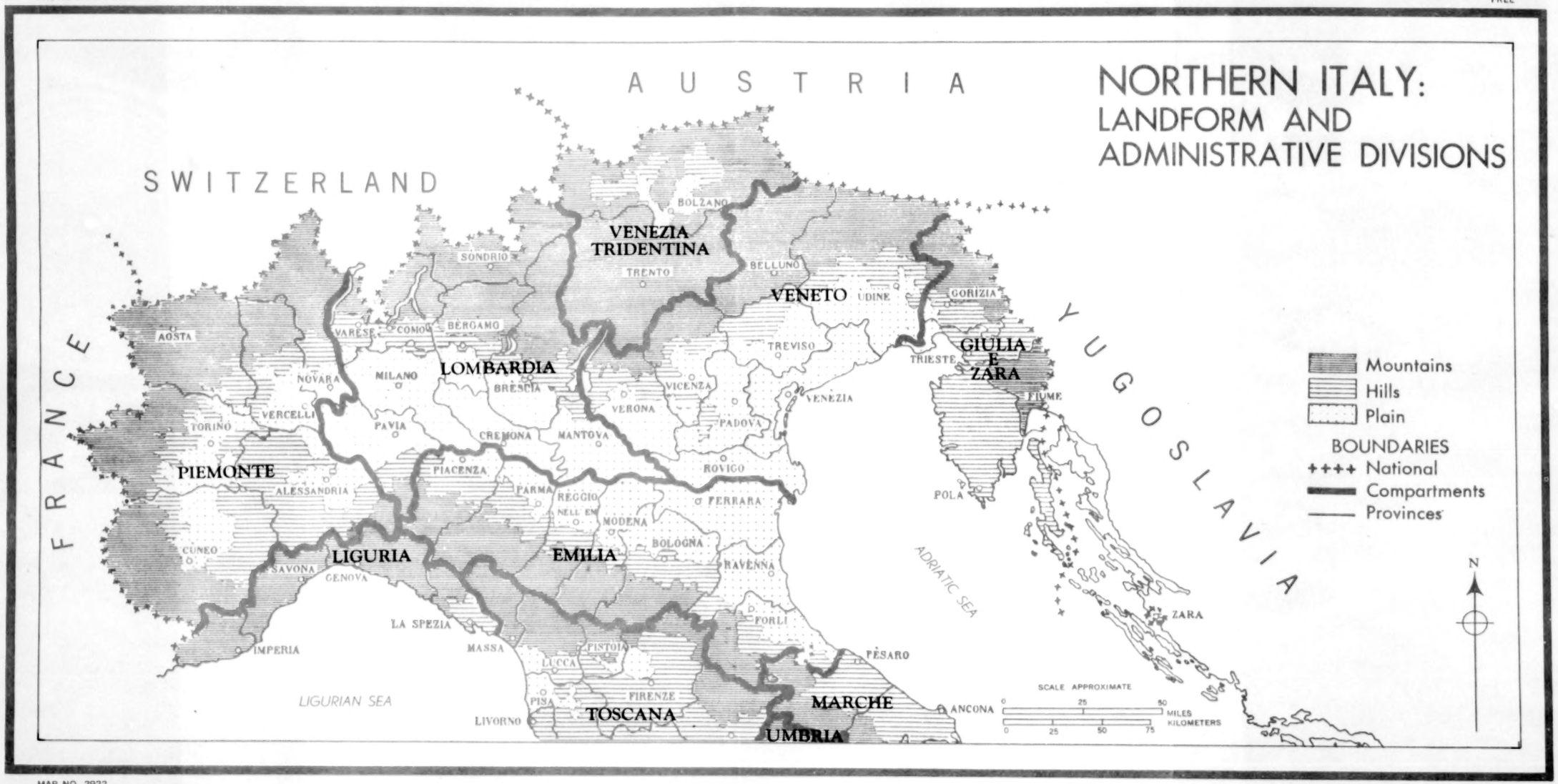
Even during the early phases of the occupation, if they occur during a season of year when it is is important to bring supplies from the farms, the military authorities should make every effort to facilitate this movement. In any event, minimum requisitions, if any, should be made of farm equipment which can be used for transport. Indeed, army vehicles should be allocated whenever possible. In the longer run, trucks, tires, and fuel for food transportation should have high priority.

The food shortage in the coastal deficit regions could be greatly alleviated if a large number of the smaller fishing craft could be reassembled and, if necessary, reequipped. Fishing boats and tackle could be repaired or manufactured locally, and a quick partial recovery of the fishing industry could be encouraged by subsidies in the form of higher prices or larger shares of the catch. The fishing industry could probably be restored to nearly its pre-war status within six months. The office of the Inspector General of Fisheries in the Ministry of Agriculture and Forestry would be able to render expert aid.

The agricultural production program should be geared to wartime needs. It is likely that recent efforts toward increasing the degree of self-sufficiency will have to be continued for some time, with emphasis on such crops as potatoes, sugar beets, oil seeds, and, in general, on crop production for direct human consumption in preference to livestock production. In spite of the probable depopulation of the livestock by the German requisitions and slaughtering, no major effort to restock should be made in the emergency period. Production plans should be implemented by a system of subsidies and bonuses on crops the production of which is to be favored.

PROVISIONAL EDITION

FREE



MAP NO. 2922
15 DECEMBER 1943

Fig. 1

R & A. OSS
REPRODUCED, OSS

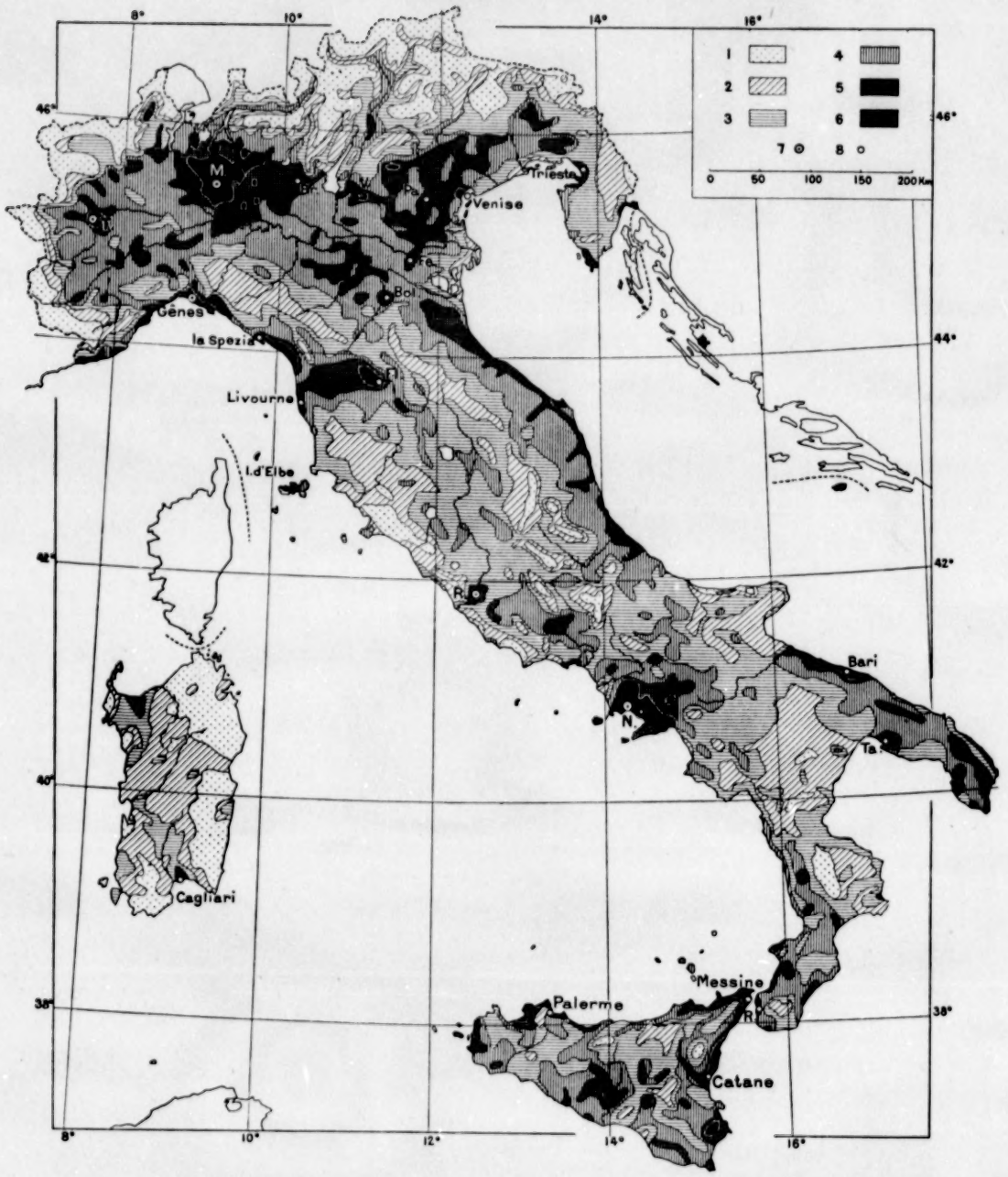


Figure 2 DENSITY OF POPULATION.

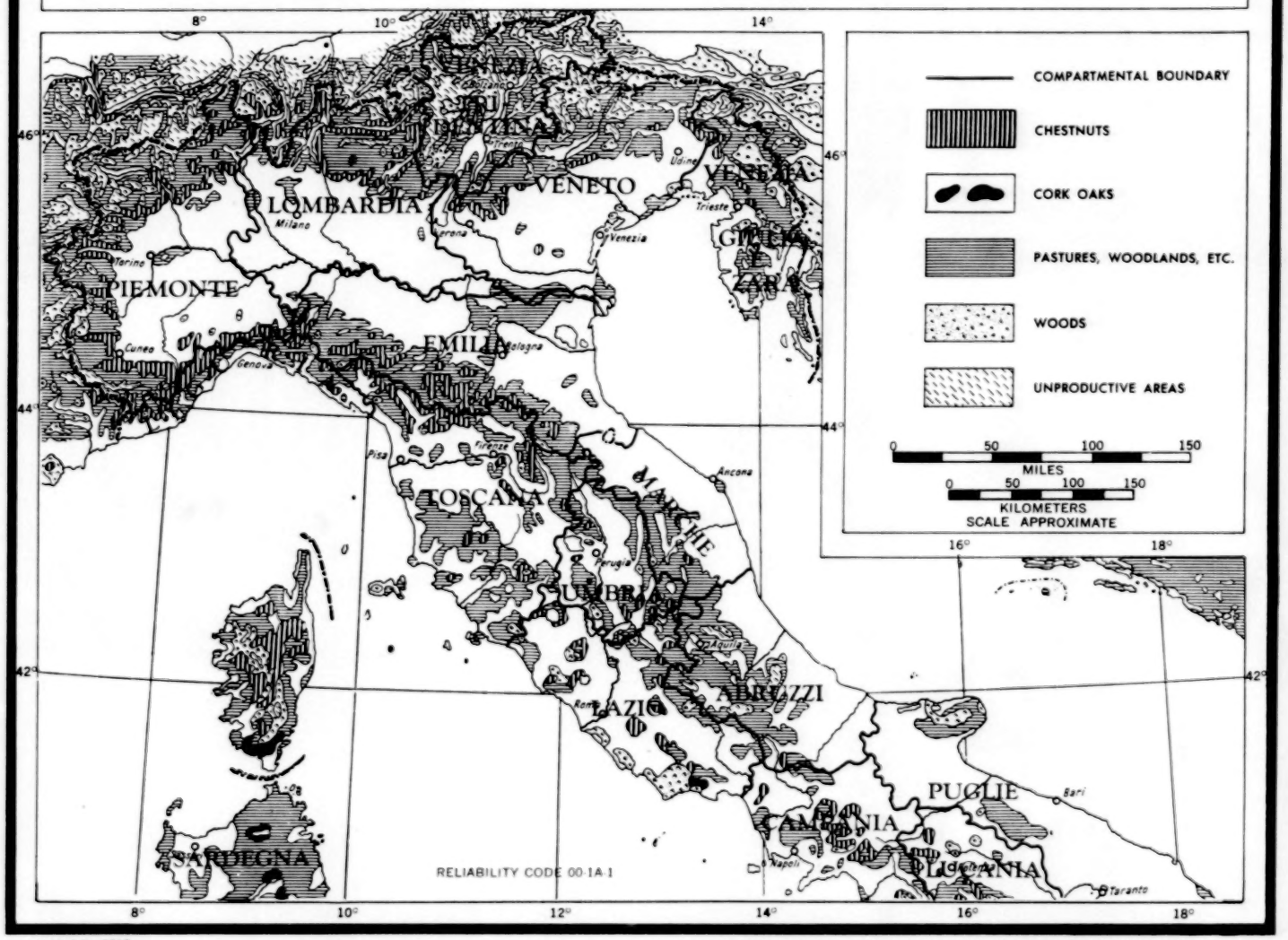
Explanation of legend: 1, less than 65 people per square mile; 2, 65 to 130; 3, 130 to 160; 4, 260 to 320; 5, 320 to 1300; 6, more than 1300; 7, cities with more than 500,000 inhabitants; 8, cities with 100,000 to 500,000.

PROVISIONAL EDITION

FREE

ITALY

VEGETATION AND LAND USE, I



MAP NO. 2895
6 DECEMBER 1943

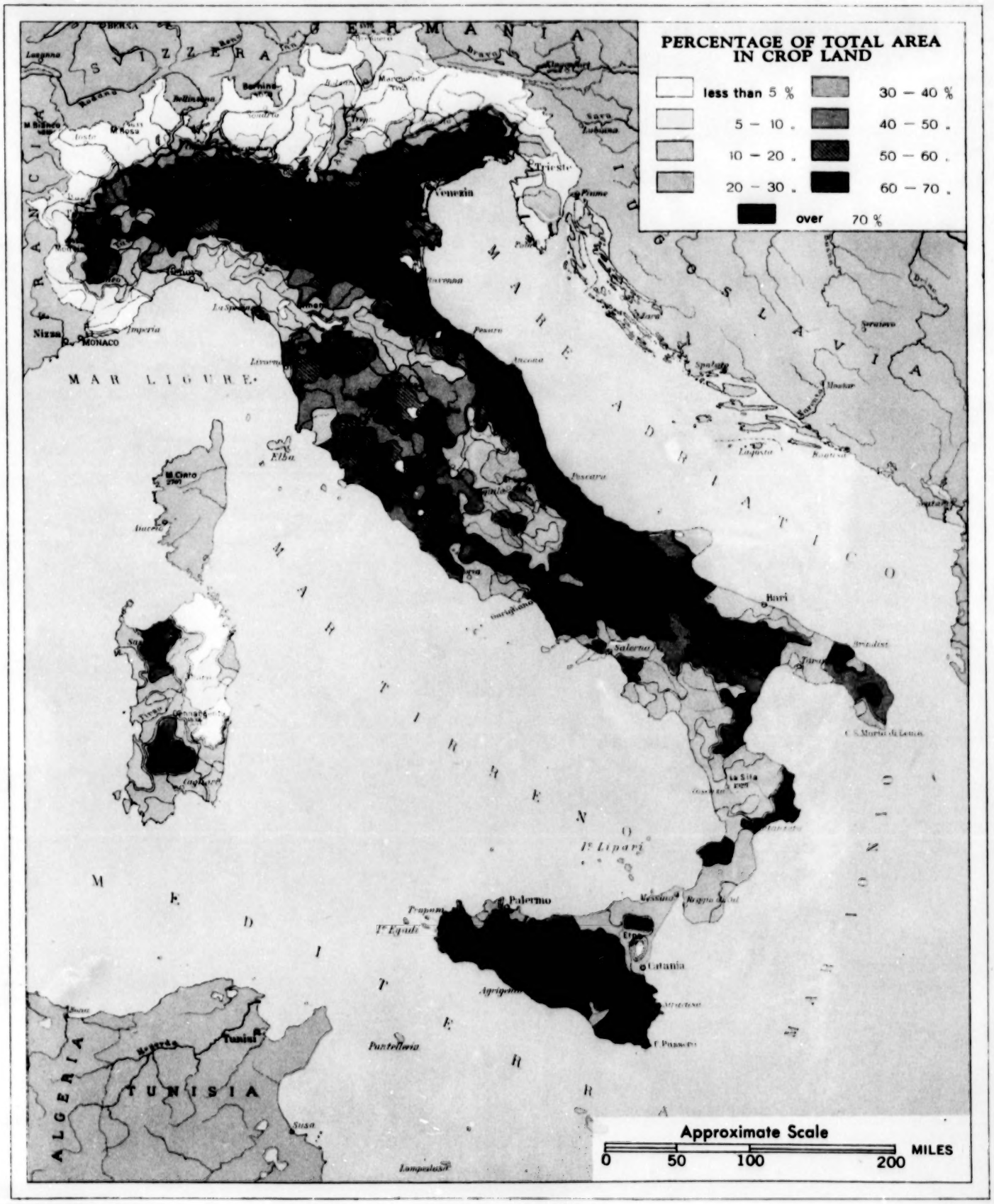
COMPILED AND DRAWN IN THE BRANCH OF RESEARCH AND ANALYSIS, OSS
LITHOGRAPHED IN THE REPRODUCTION BRANCH, OSS

Fig. 3

PROVISIONAL EDITION

I T A L Y

FREE



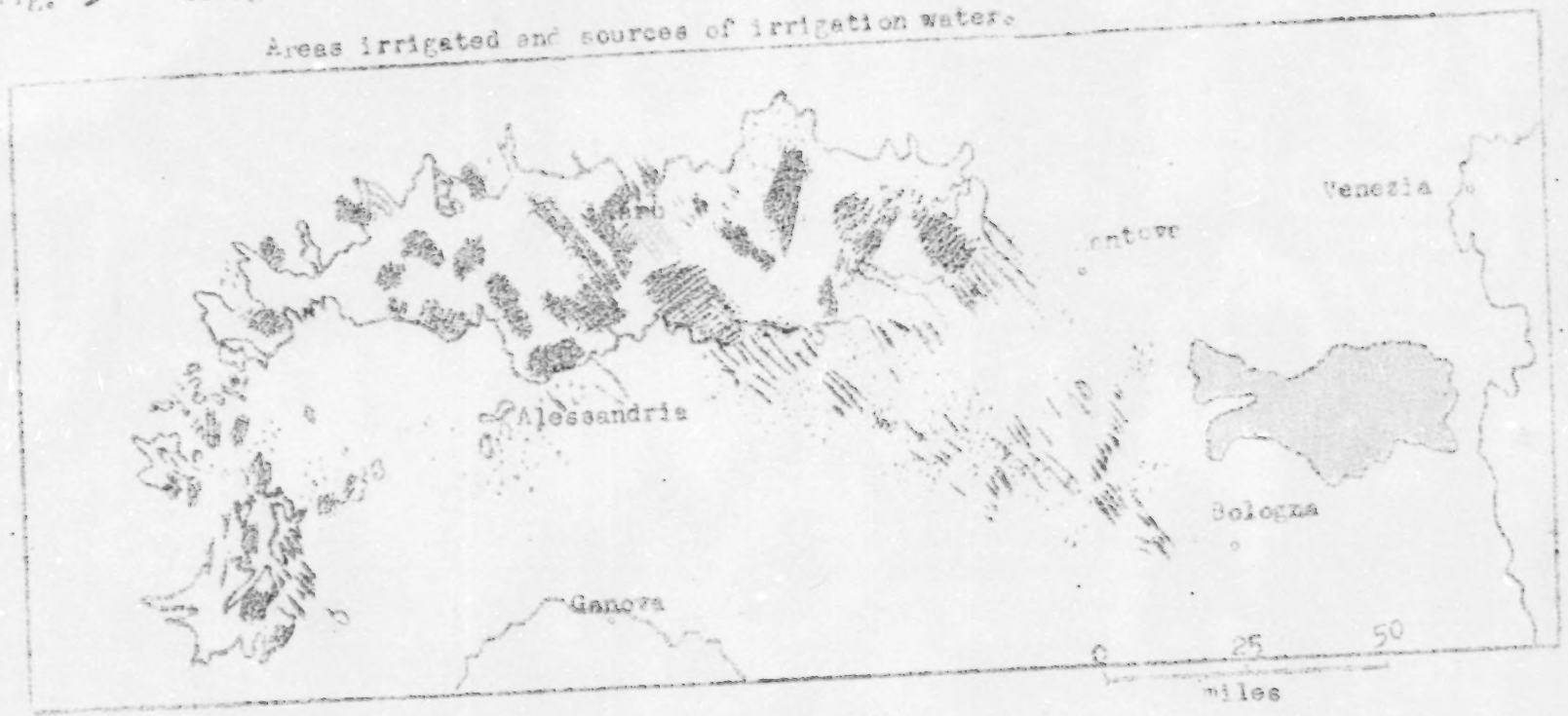
MAP NO. 2871
29 NOVEMBER, 1943

Fig. 4

R & A, OSS
REPRODUCED, OSS

Fig. 5 Irrigation in Piemonte, Lombardia, and Emilia.

Areas irrigated and sources of irrigation water.



Legend

Water derived from rivers or streams.

Water derived from springs or drainage canals.

Water derived from city drain and sewer system. (South of Milano)

Land where drainage rather than irrigation is practised. (Ferrara)

Wells used for irrigation.

Non-irrigated areas are left blank, and free of limiting boundaries.

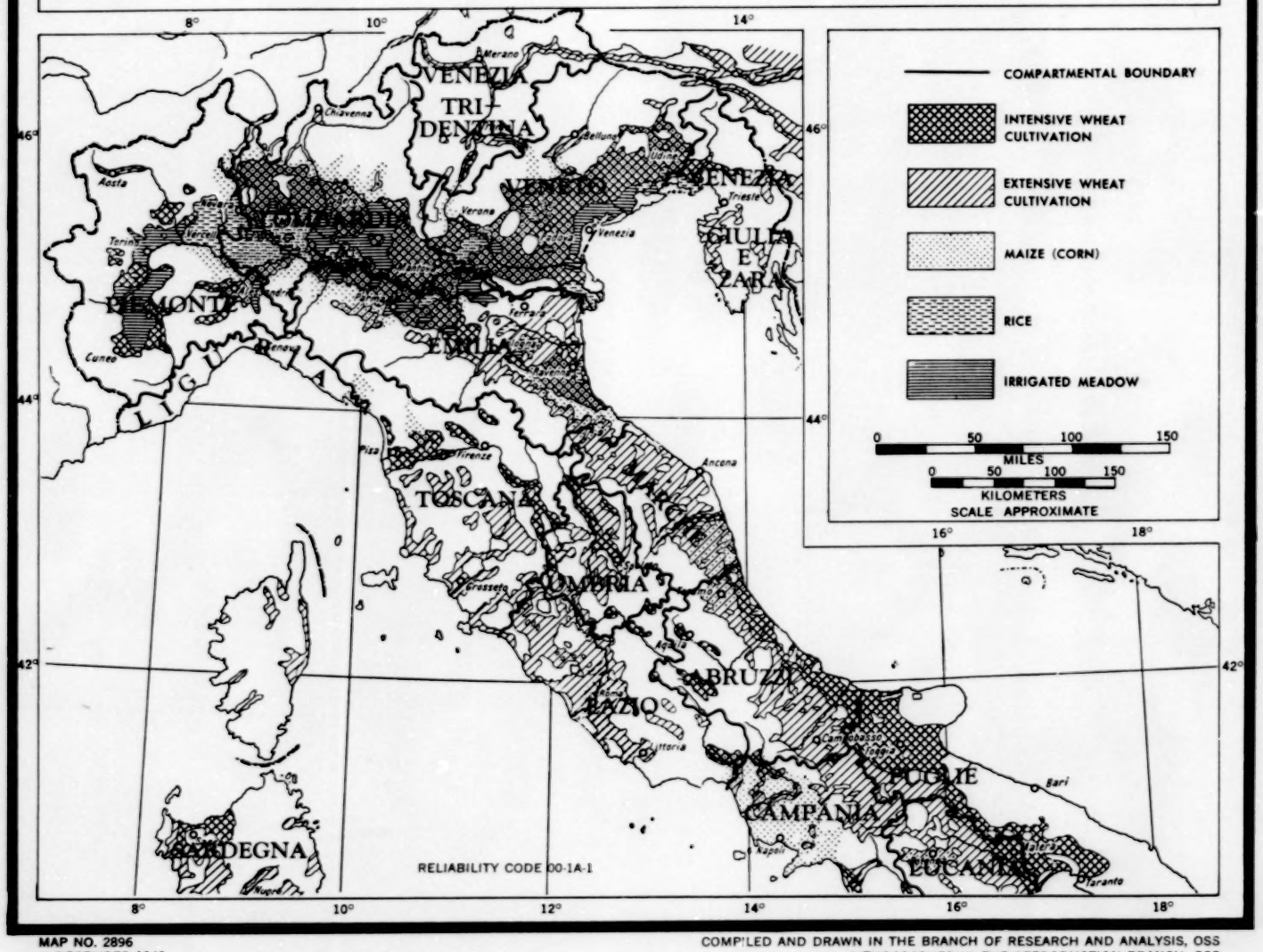
Overlapping of patterns indicates importance of more than one type of source.

PROVISIONAL EDITION

FREE

ITALY

GRAIN AND CULTIVATED MEADOWS



MAP NO. 2896
6 DECEMBER 1943

COMP'LED AND DRAWN IN THE BRANCH OF RESEARCH AND ANALYSIS, OSS
LITHOGRAPHED IN THE REPRODUCTION BRANCH, OSS

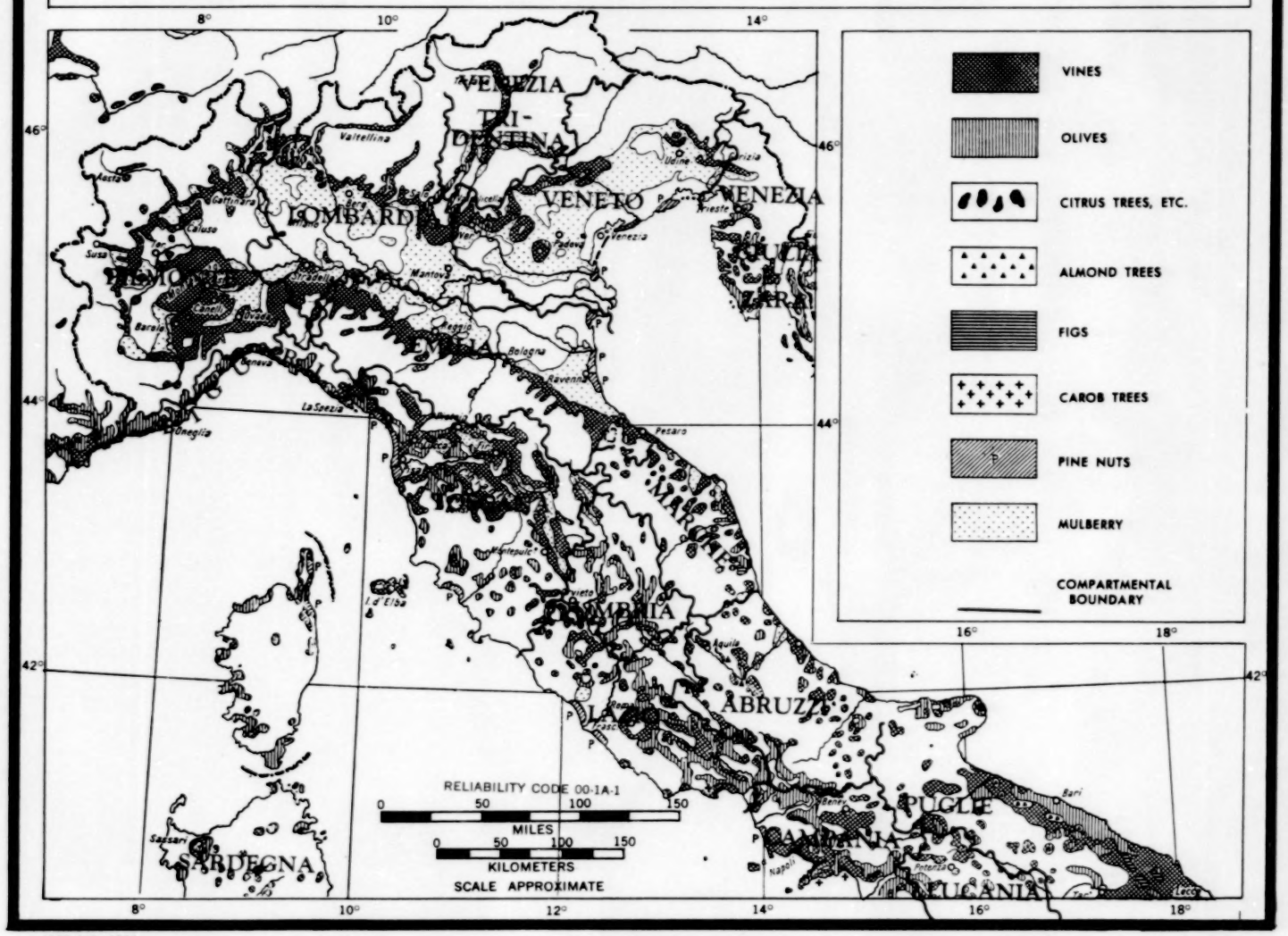
Fig. 6

PROVISIONAL EDITION

FREE

ITALY

VEGETATION AND LAND USE, II



MAP NO. 2894
6 DECEMBER 1943

LITHOGRAPHED IN THE REPRODUCTION BRANCH, OSS
COMPILED AND DRAWN IN THE BRANCH OF RESEARCH AND ANALYSIS, OSS

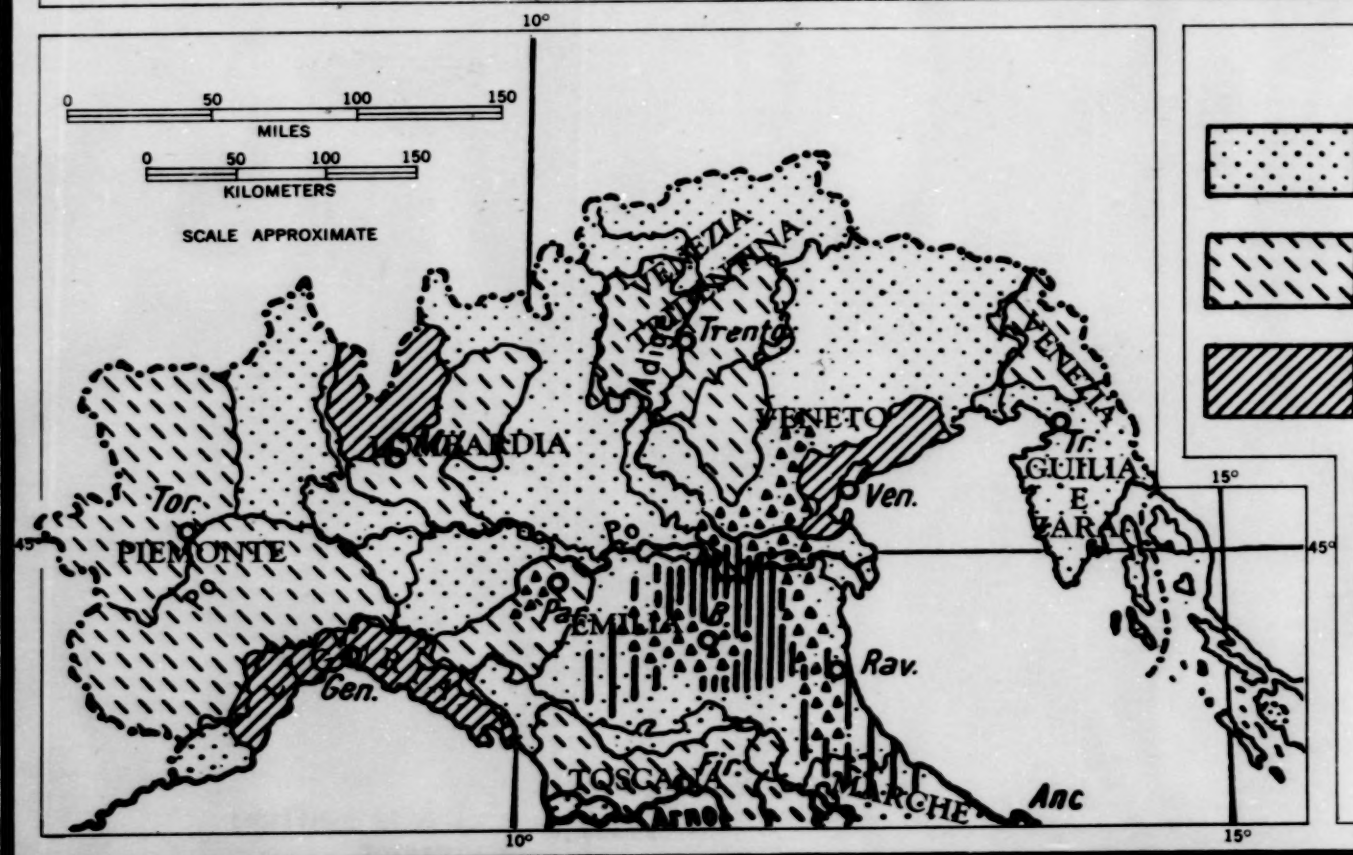
Fig. 7

PROVISIONAL EDITION

FREE

NORTHERN ITALY

SELECTED CROPS



POTATOES

AREA OF LOW PRODUCTION

AREA OF MEDIUM PRODUCTION

AREA OF HIGH PRODUCTION

SUGAR BEETS

HEMP

COMPARTMENTAL BOUNDARY

RELIABILITY CODE: 00-1A-1

MAP NO. 2933
28 DECEMBER 1943

Fig. 8

COMPILED AND DRAWN IN THE BRANCH OF RESEARCH AND ANALYSIS, OSS
LITHOGRAPHED IN THE REPRODUCTION BRANCH, OSS

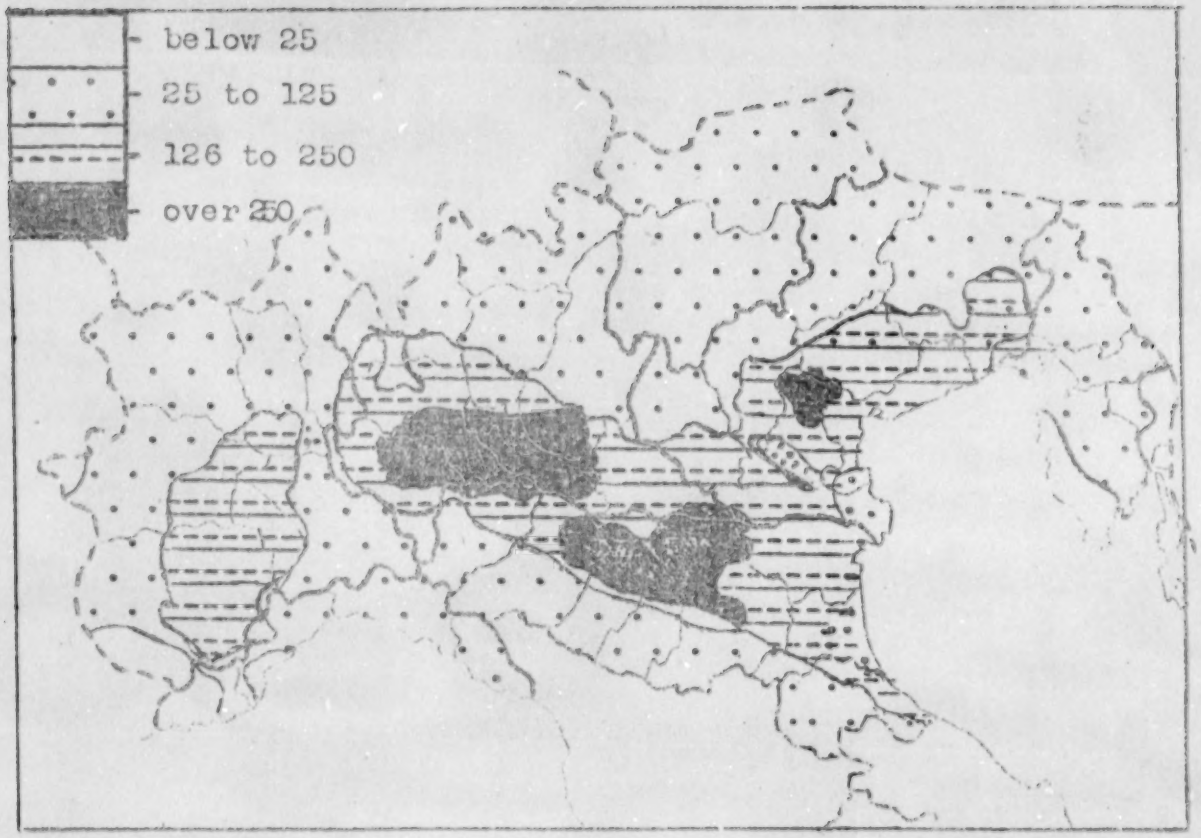


Fig. 9, Cattle, 1930 (per square mile of farm land)

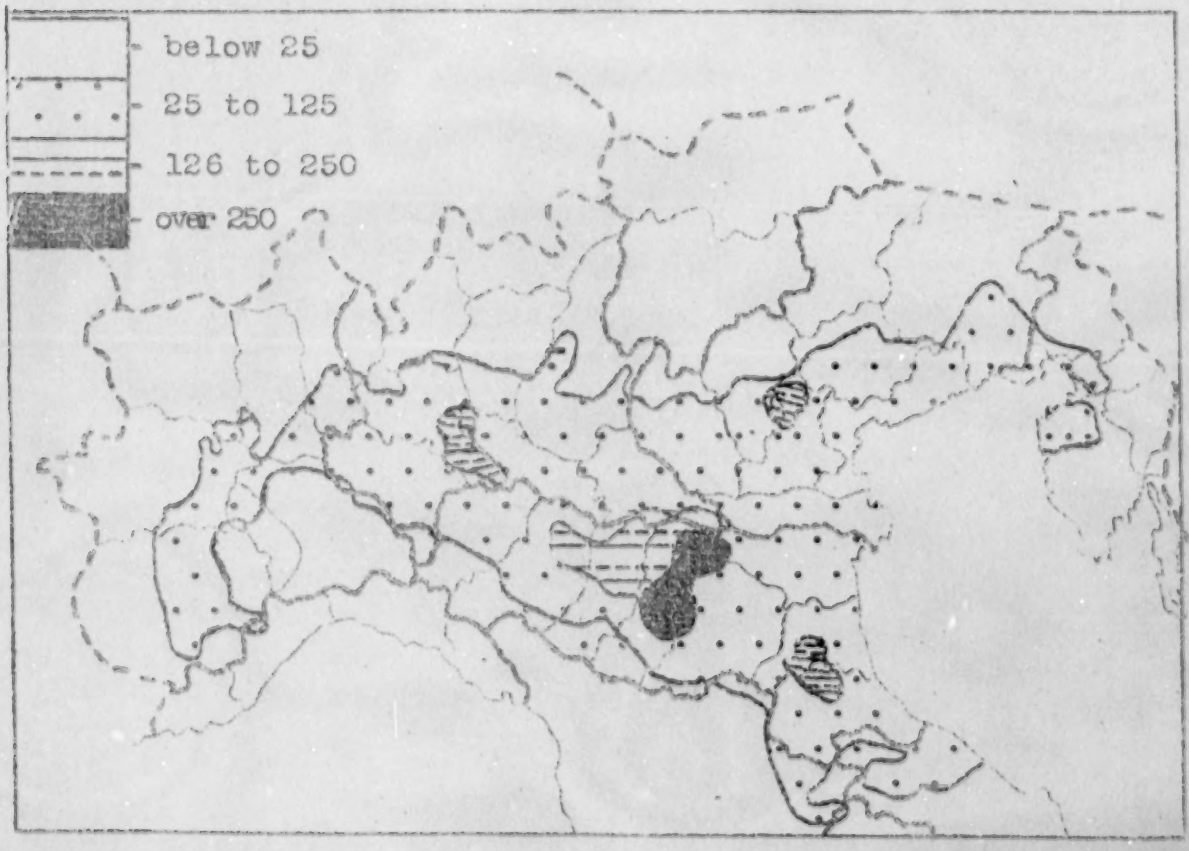


Fig. 10, Swine, 1930 (per square mile of farm land)

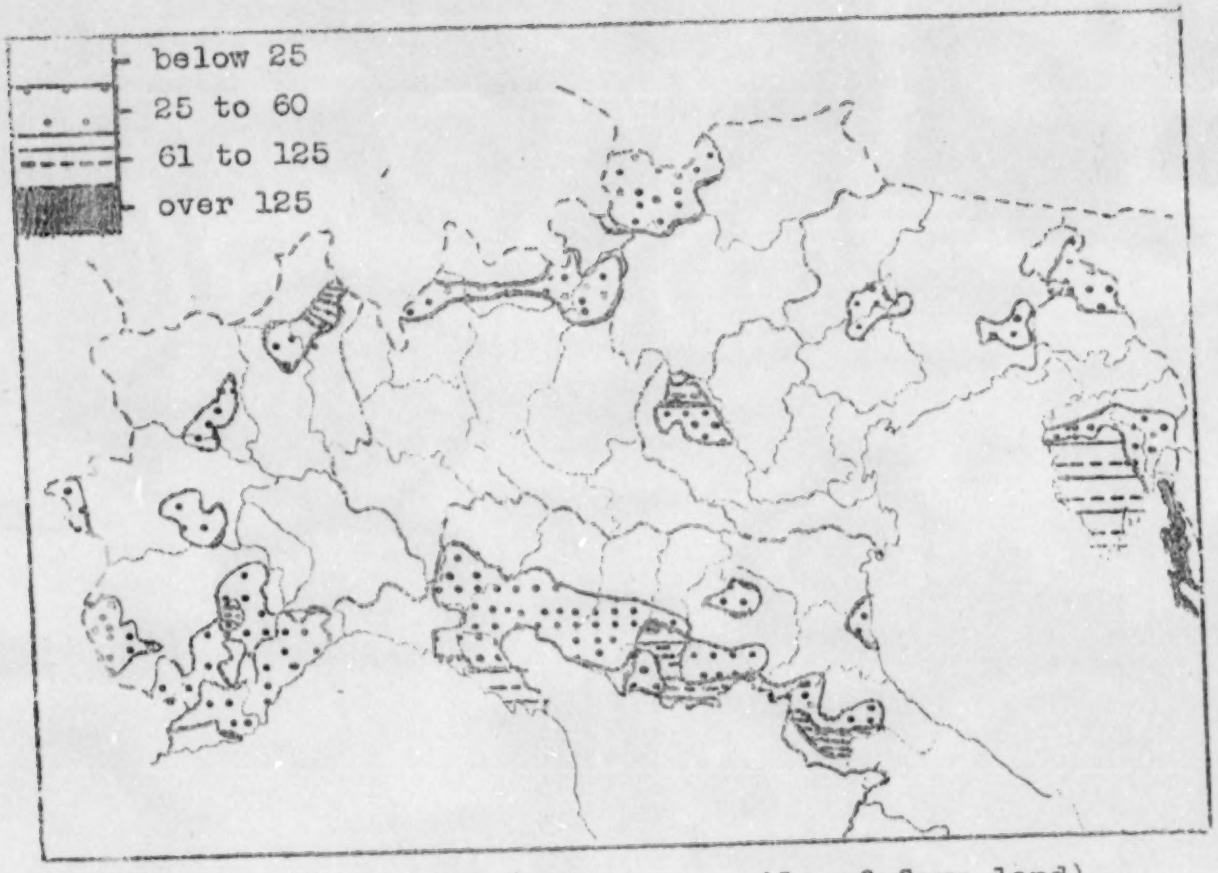


Fig. 11, Sheep, 1930 (per square mile of farm land)

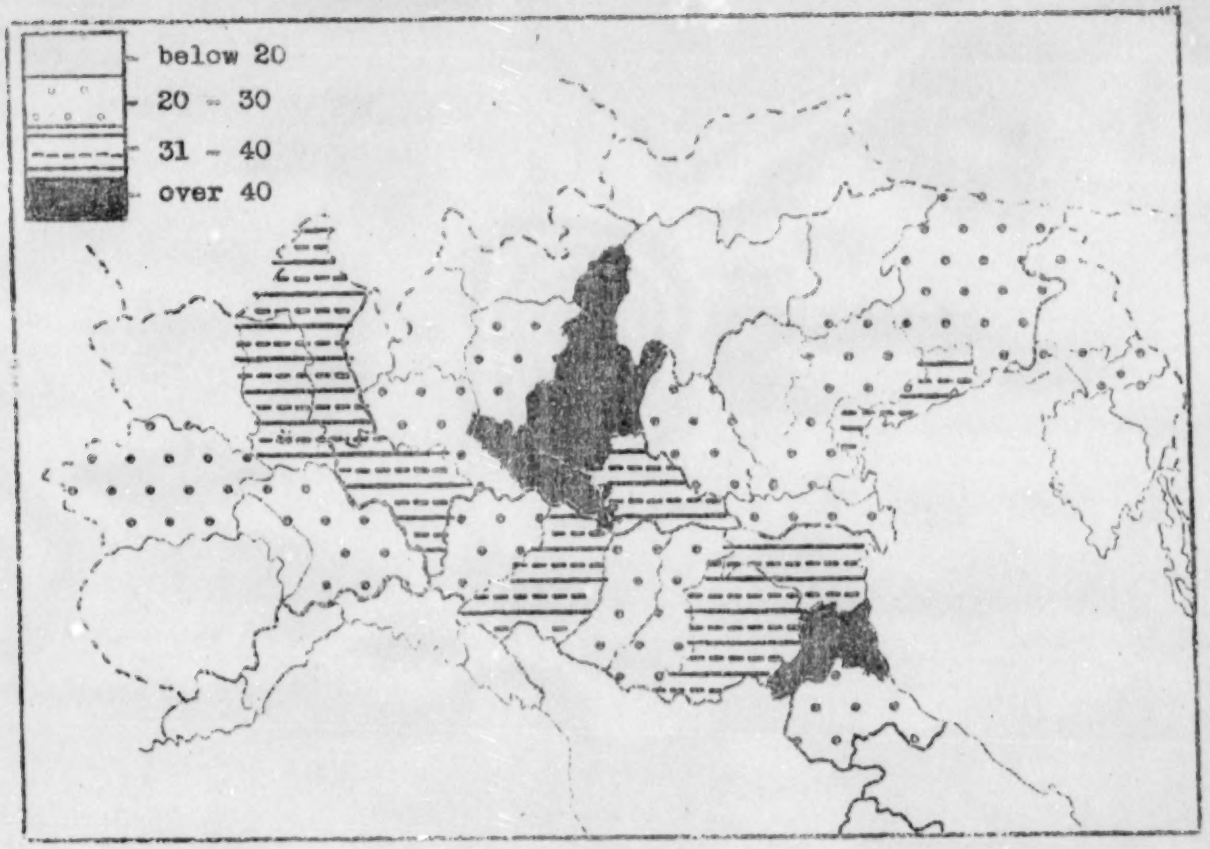


Fig.12 . Application of Anhydrous Phosphoric Acid.
(in kilograms per hectare)

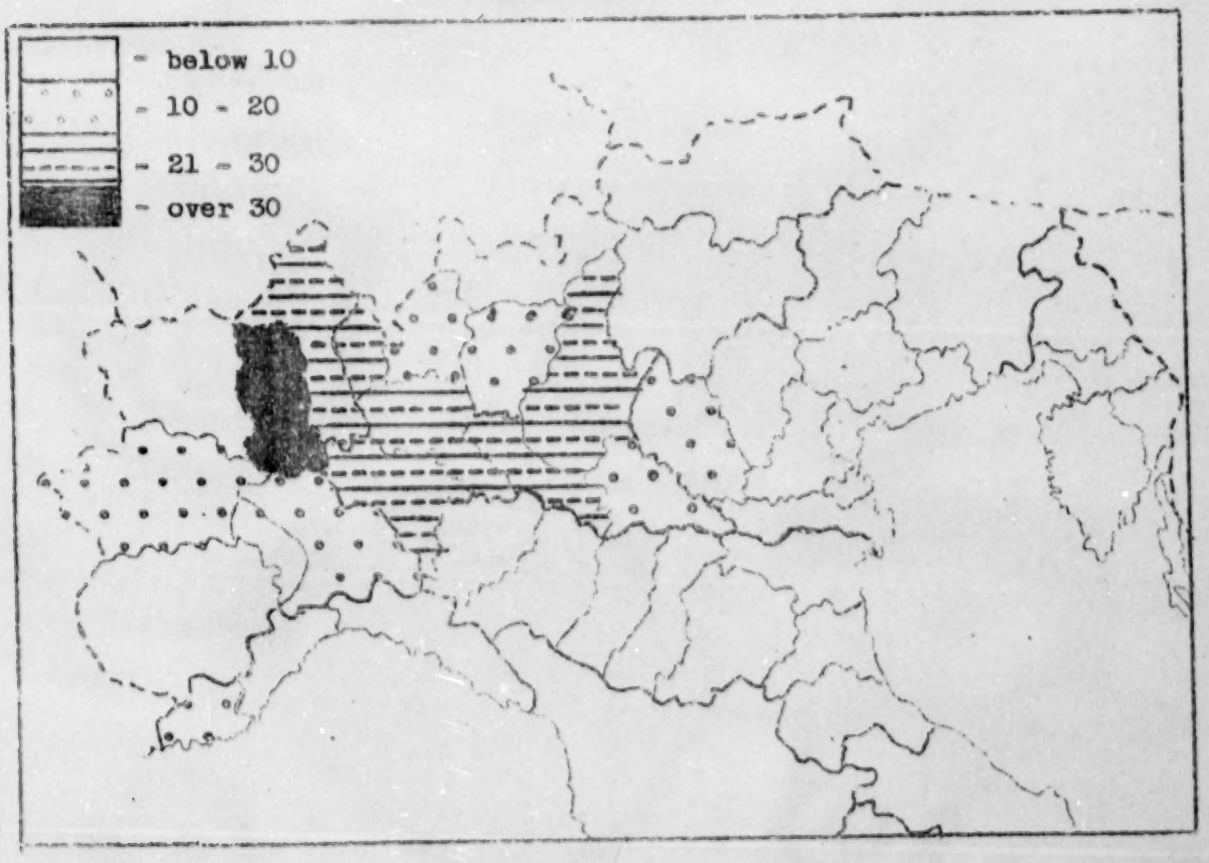


Fig. 13. Application of Nitrogen.
(in kilograms per hectare)

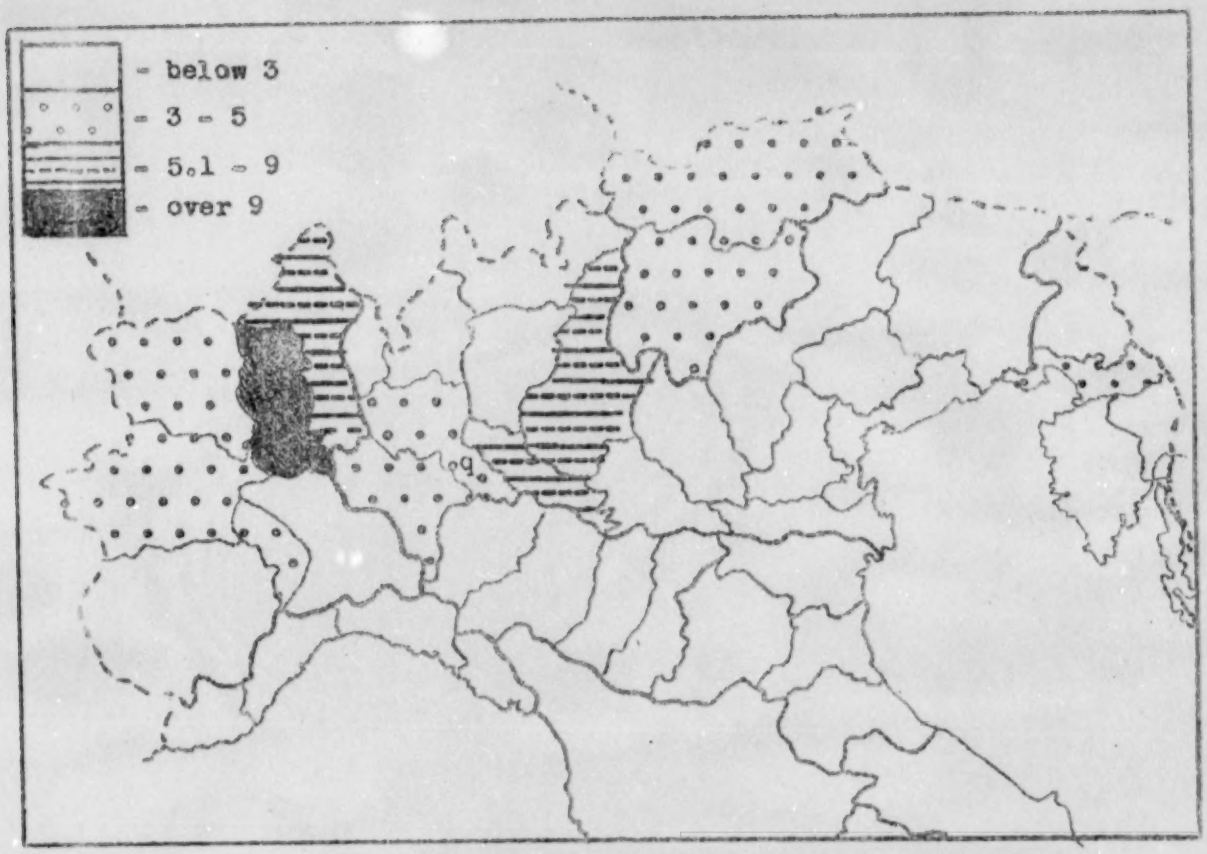


Fig. 14. Application of Pure Potash, 1937.
(in kilograms per hectare)

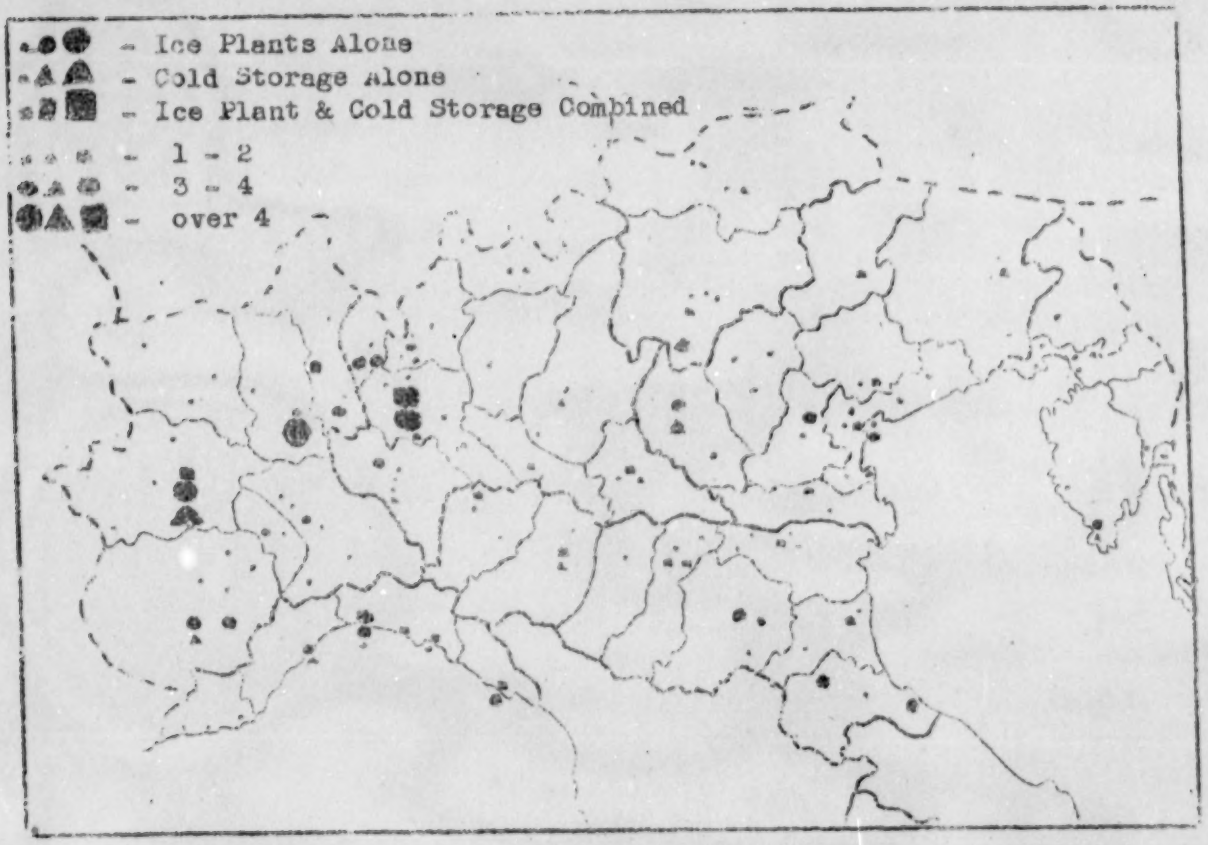


Fig.15 . Principal Ice and Cold Storage Plants, 1939

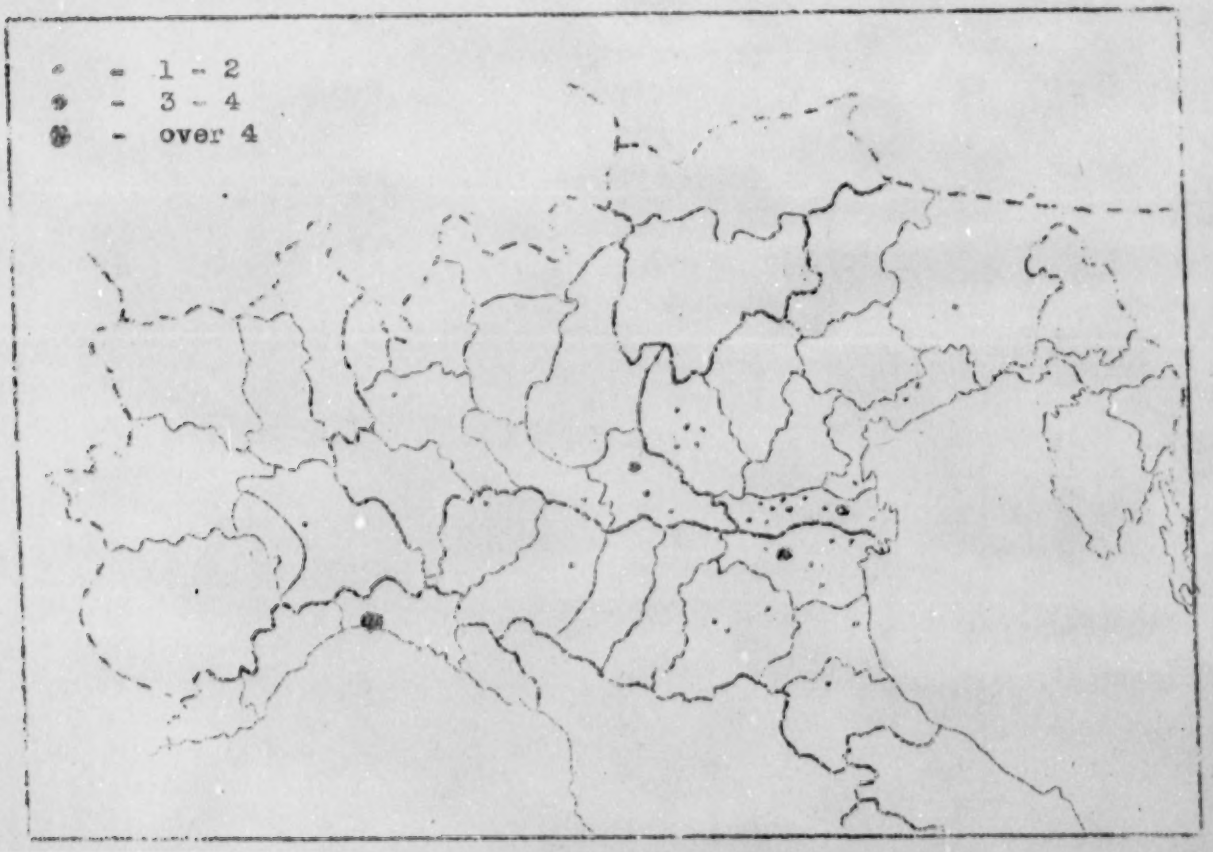


Fig.16 . Principal Sugar Refineries, 1940

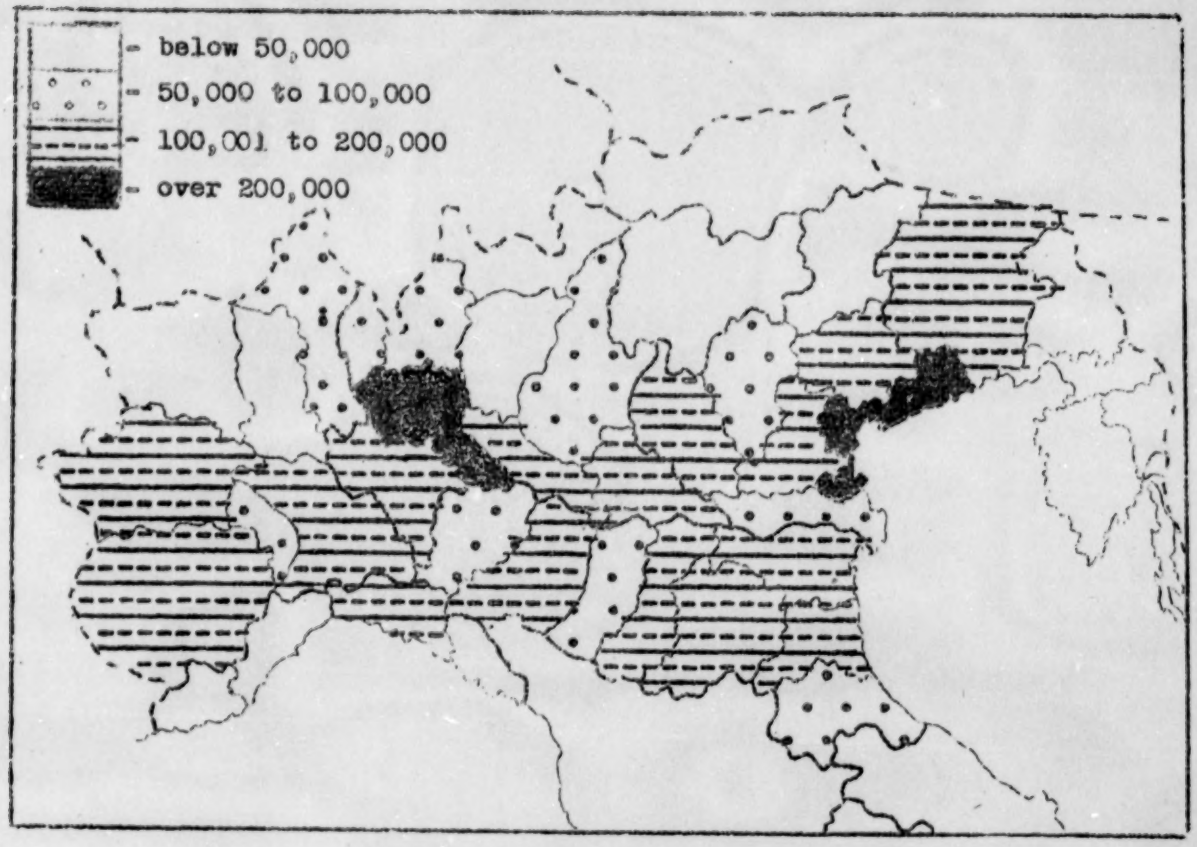


Fig. 17 . Production of Flour, 1937
(in metric tons)

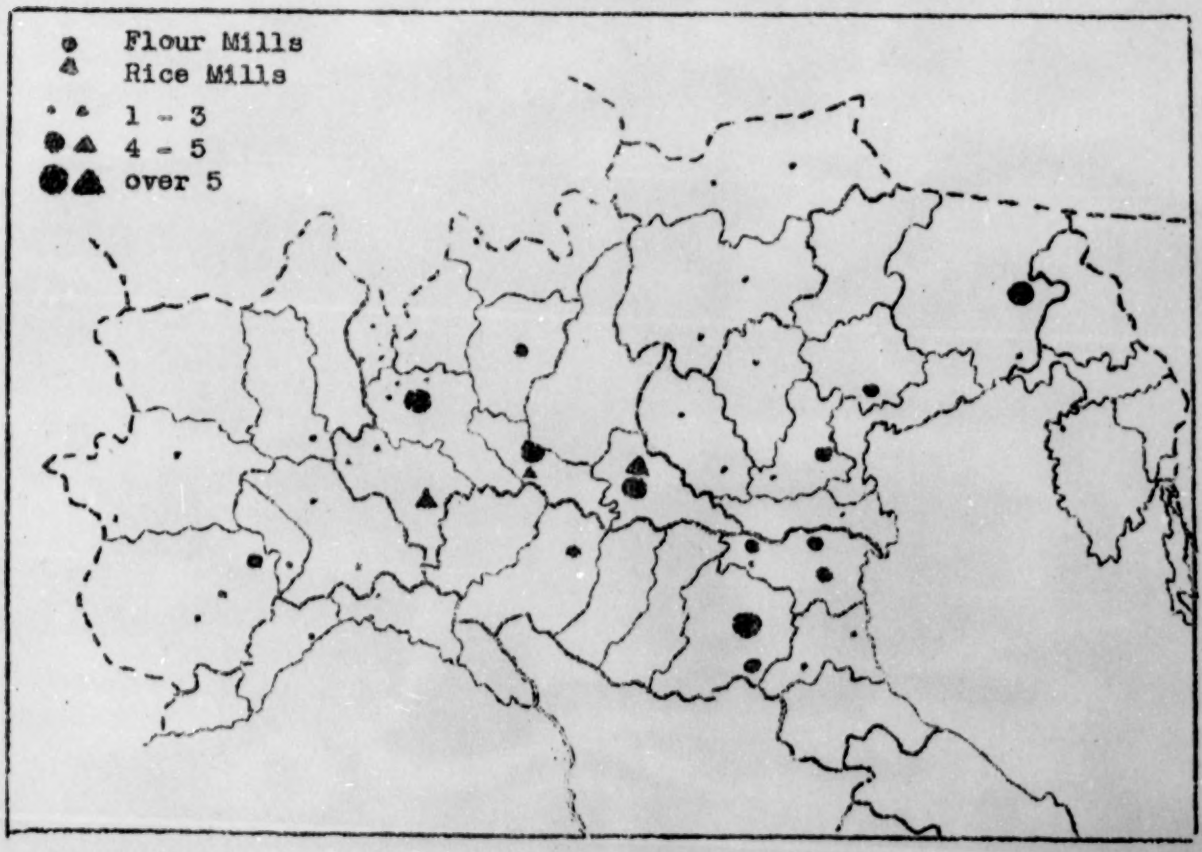


Fig. 18 . Principal Flour and Rice Mills, 1937

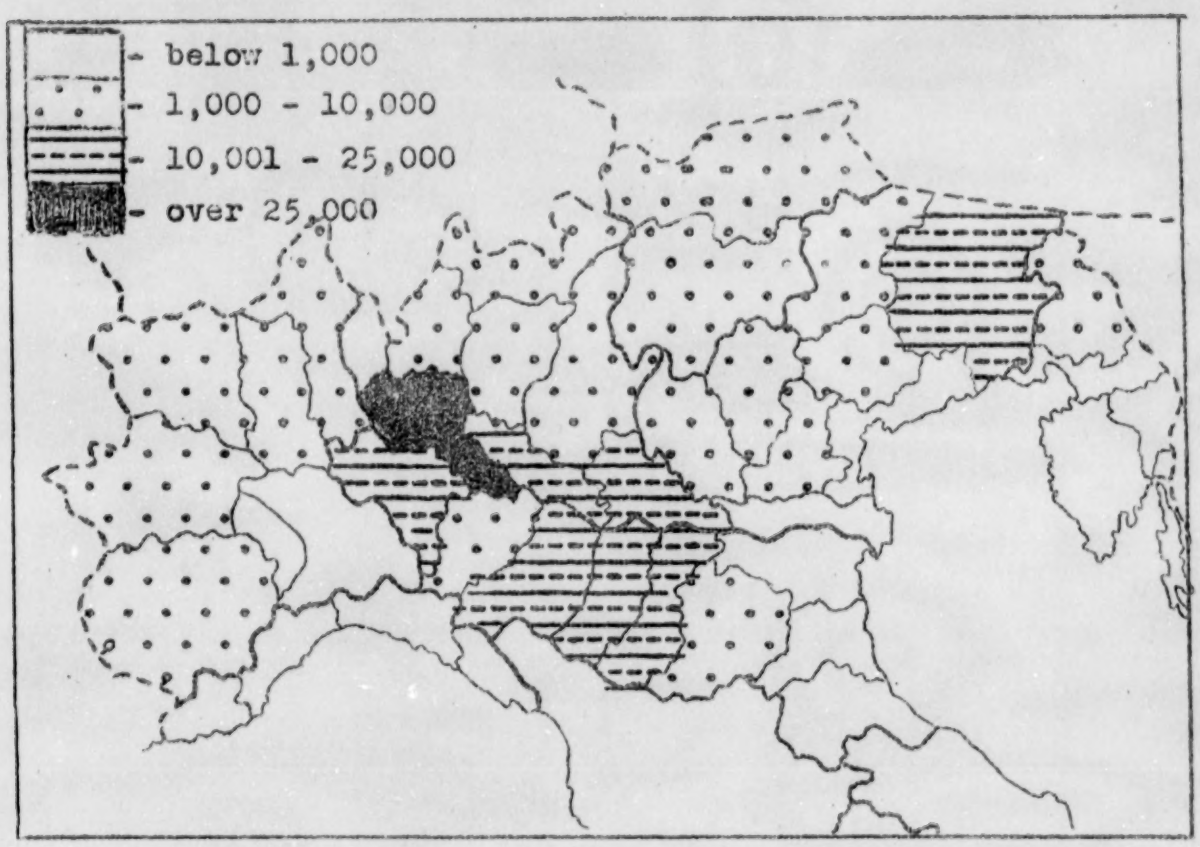


Fig. 19 , Butter and Cheese Production, 1937
(in metric tons)

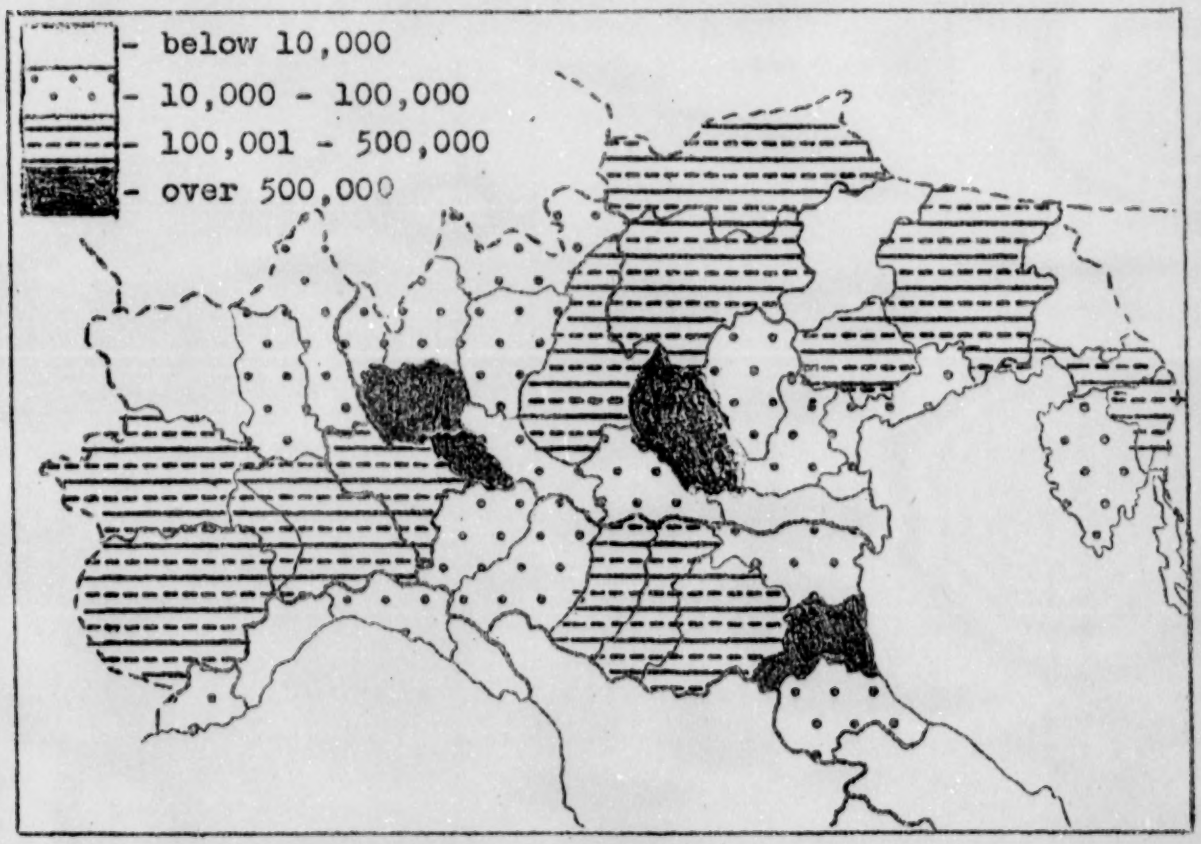


Fig. 20, Wine Production, 1937
(in hectoliters)

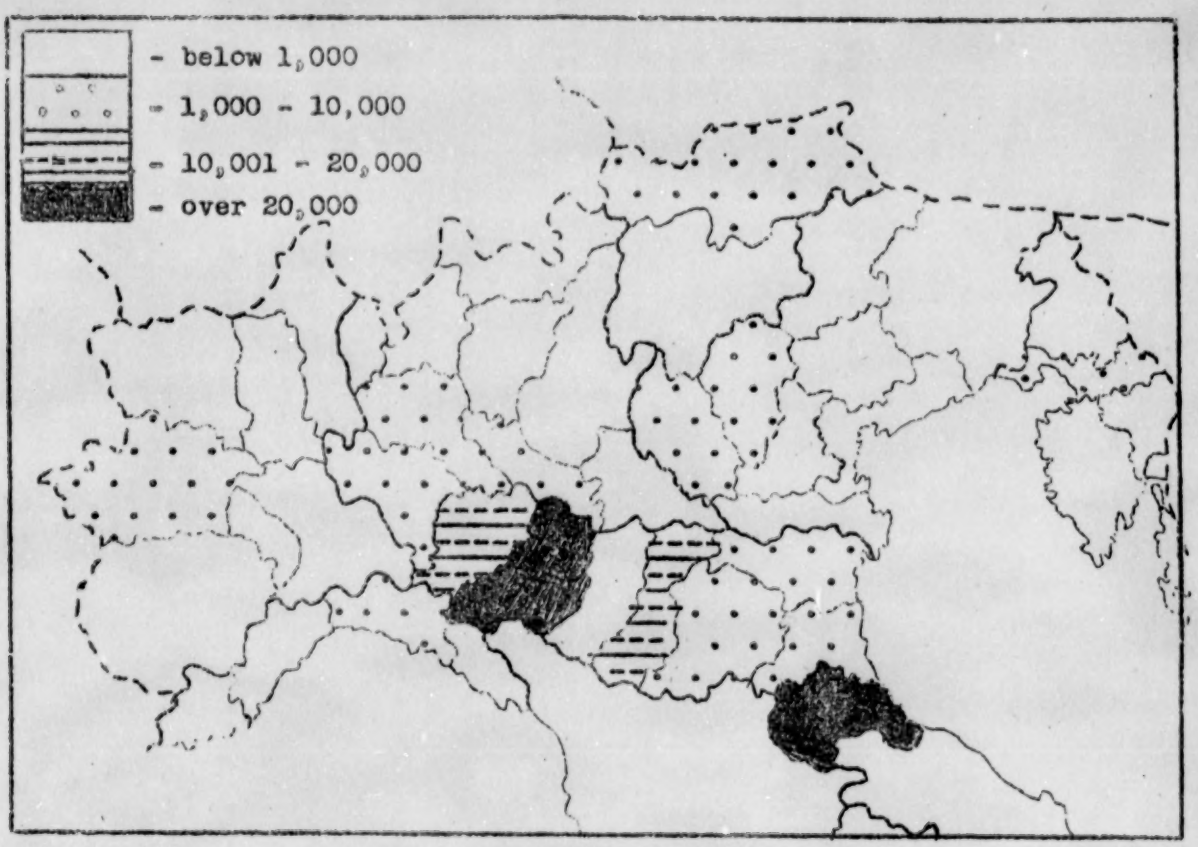


Fig. 21 . Cannery Production, 1937
(in metric tons)

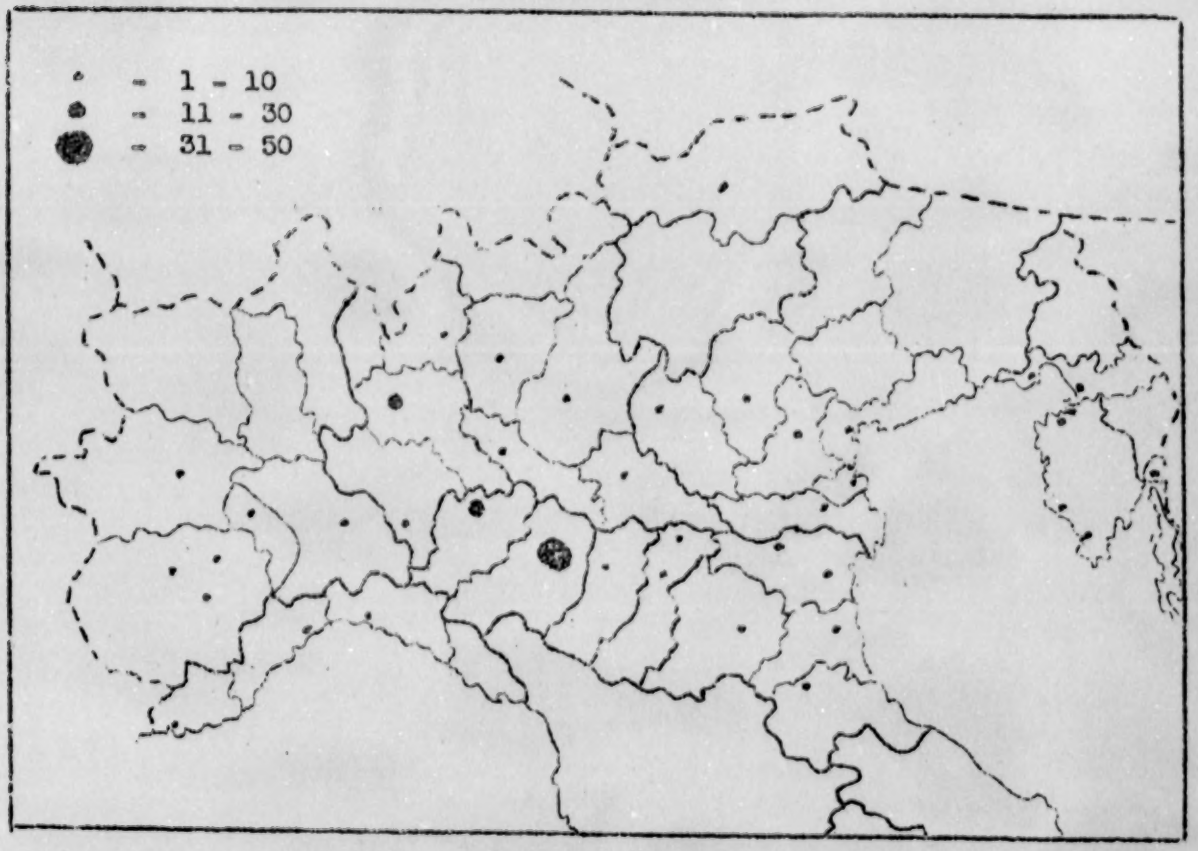


Fig. 22 . Principal Canneries, 1940.

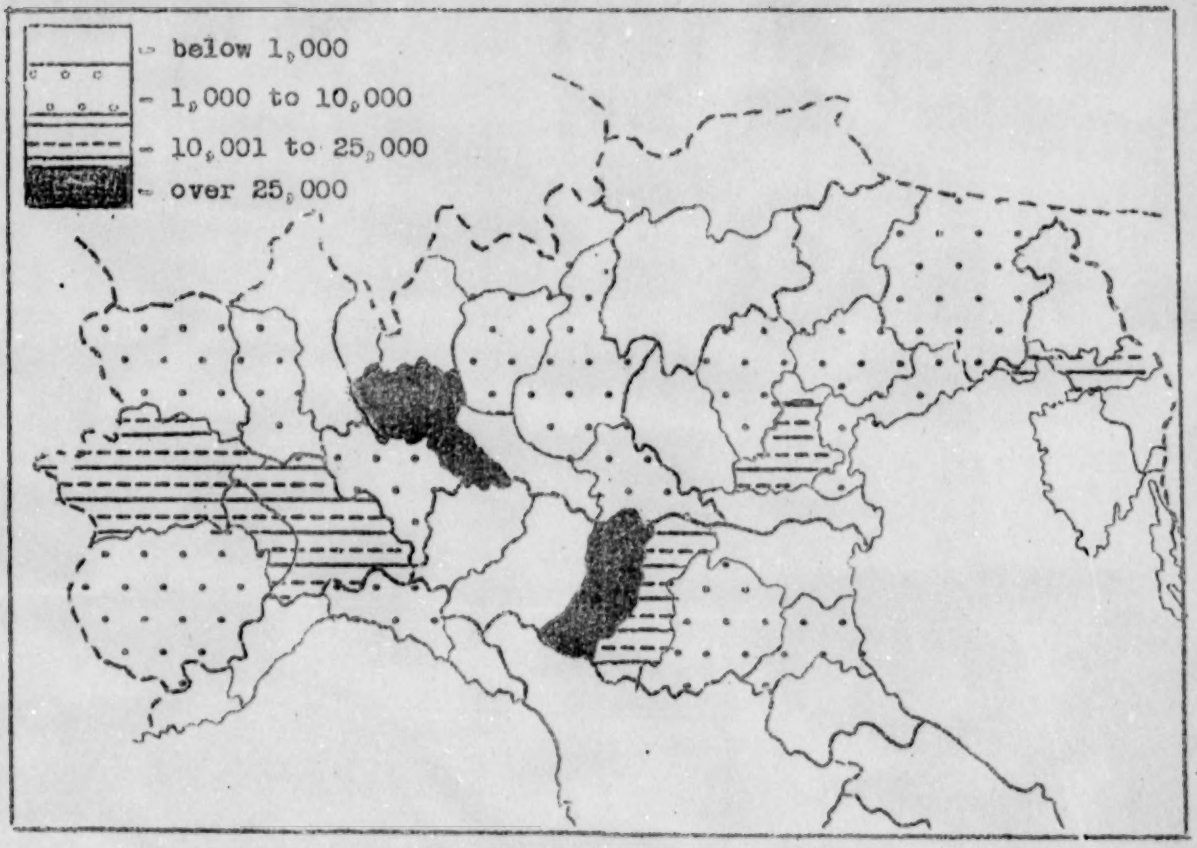
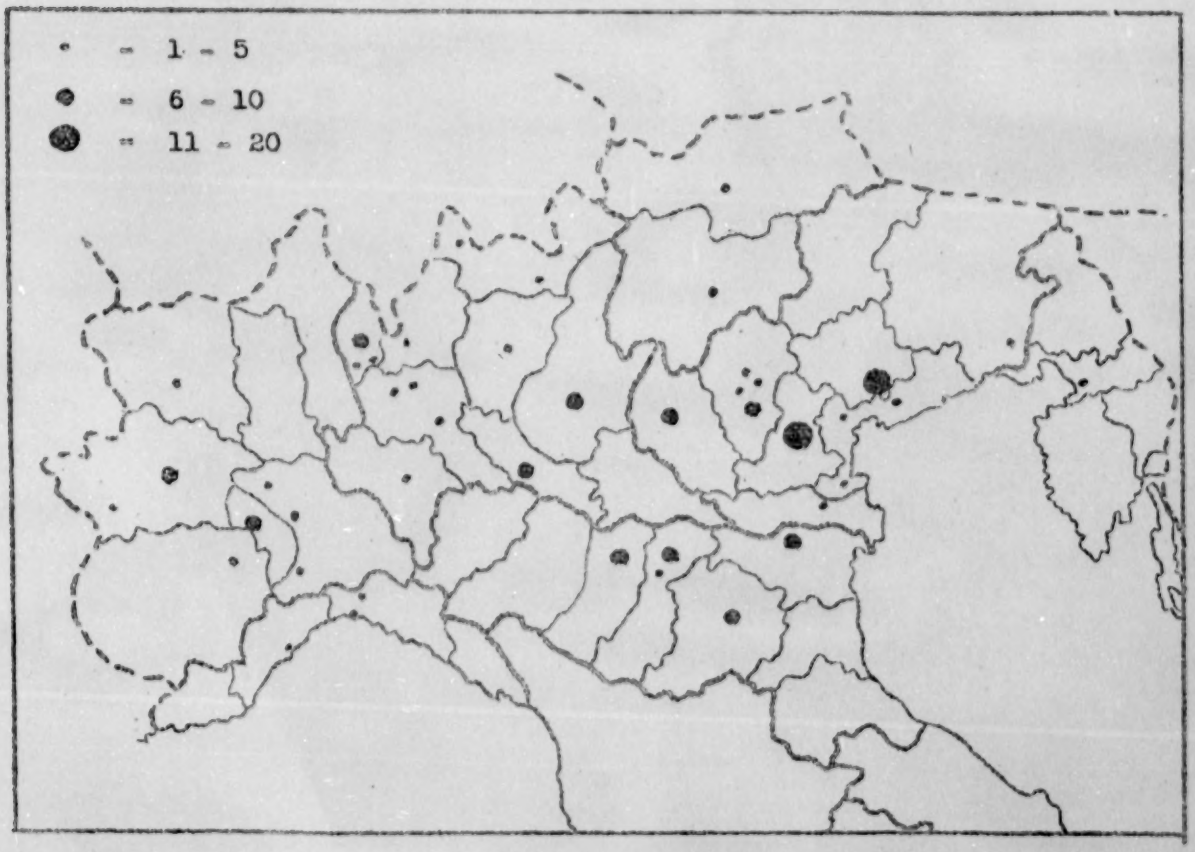


Fig. 23. Distillery Production, 1937
(in hectoliters)



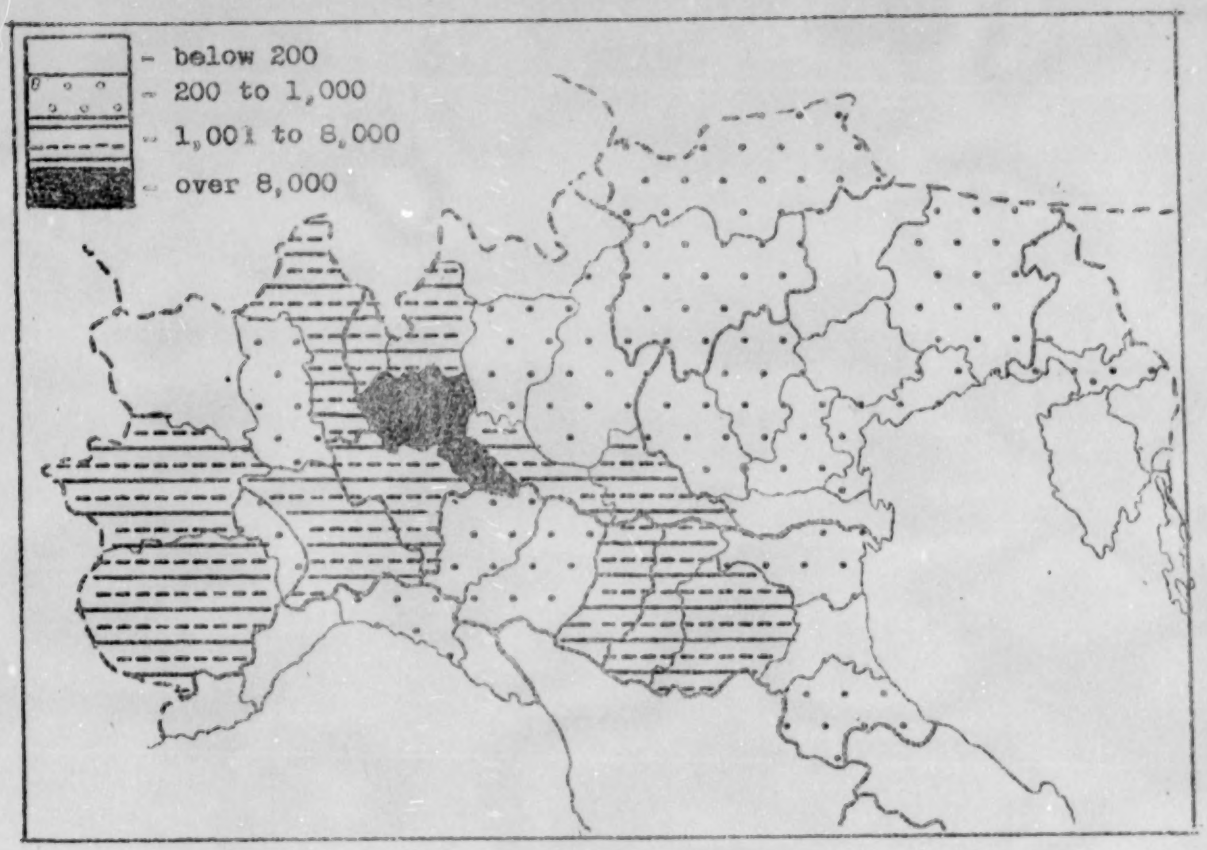


Fig. 25. Meat Packing Production, 1937.
(in metric tons)

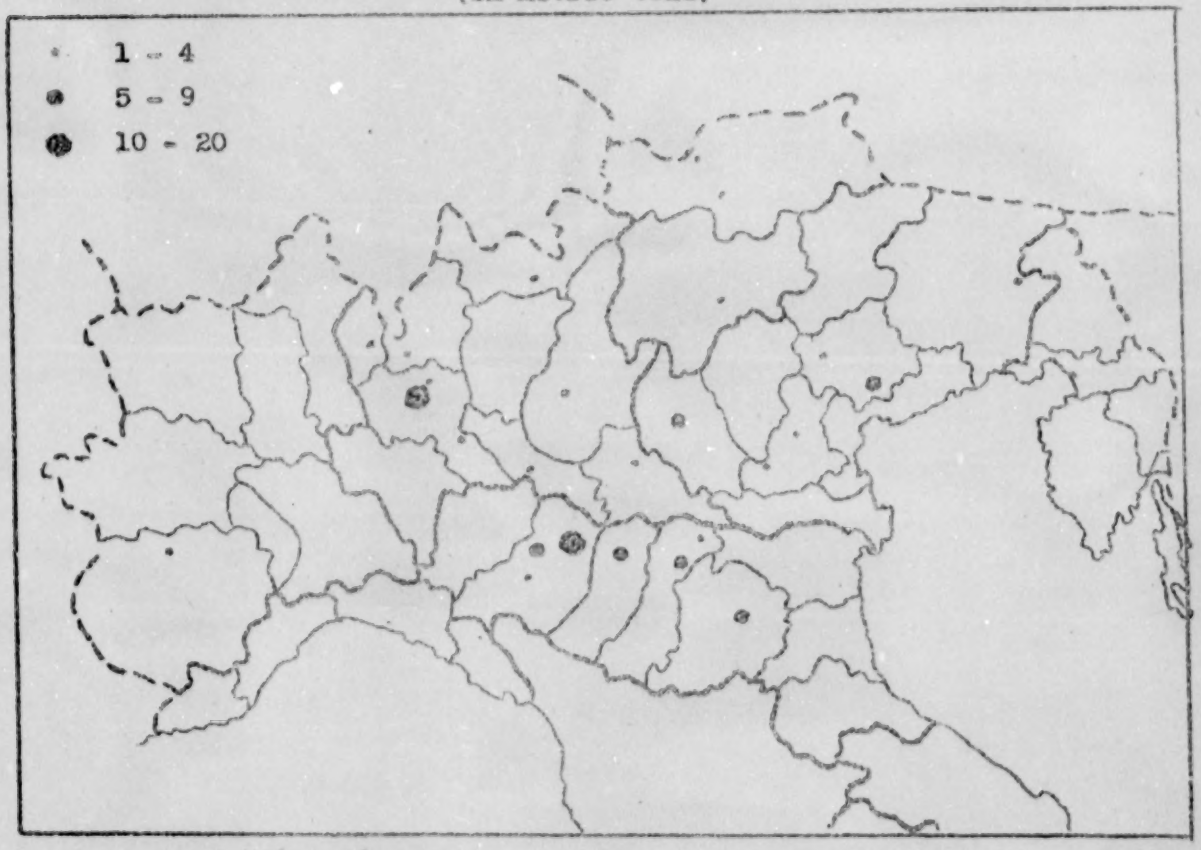


Fig. 26. Principal Sausage Plants, 1940

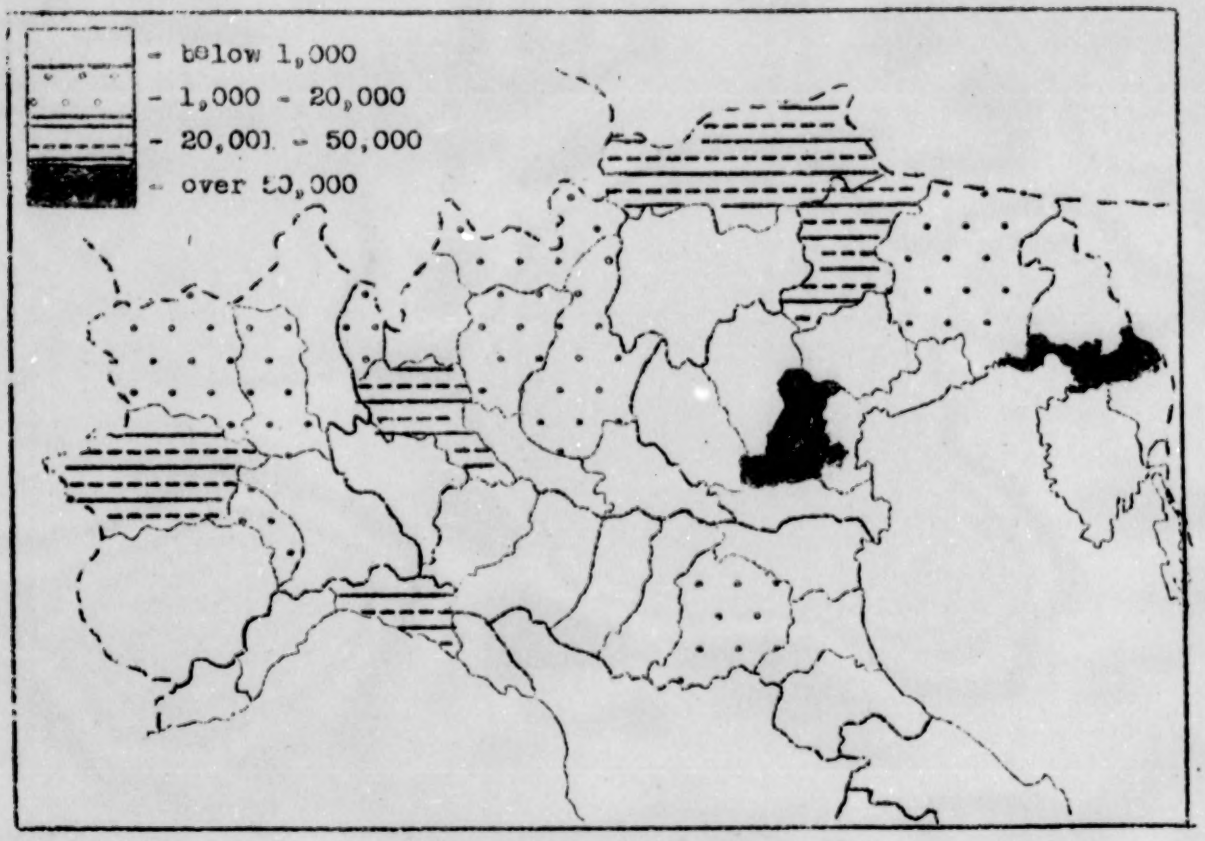


Fig. 27. Brewery Production, 1937
(in hectoliters)

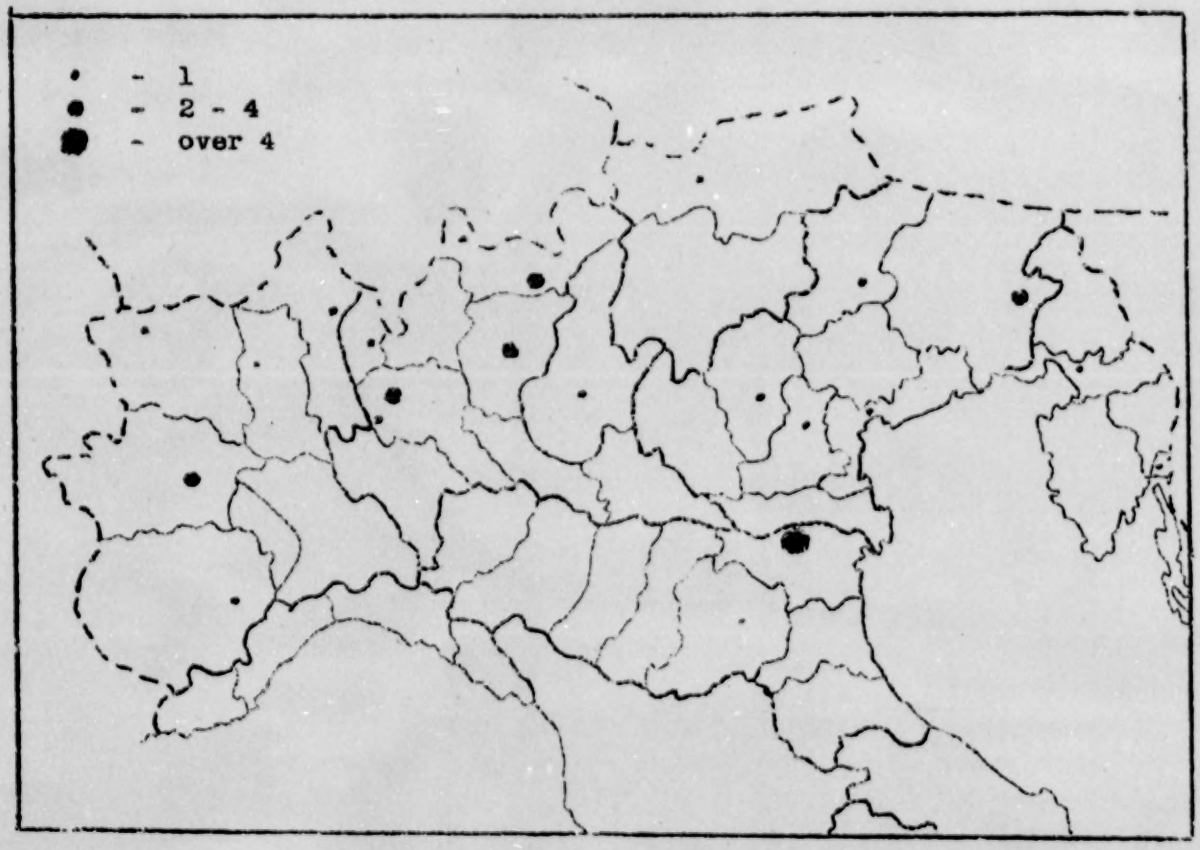


Fig. 28. Principal Breweries, 1940

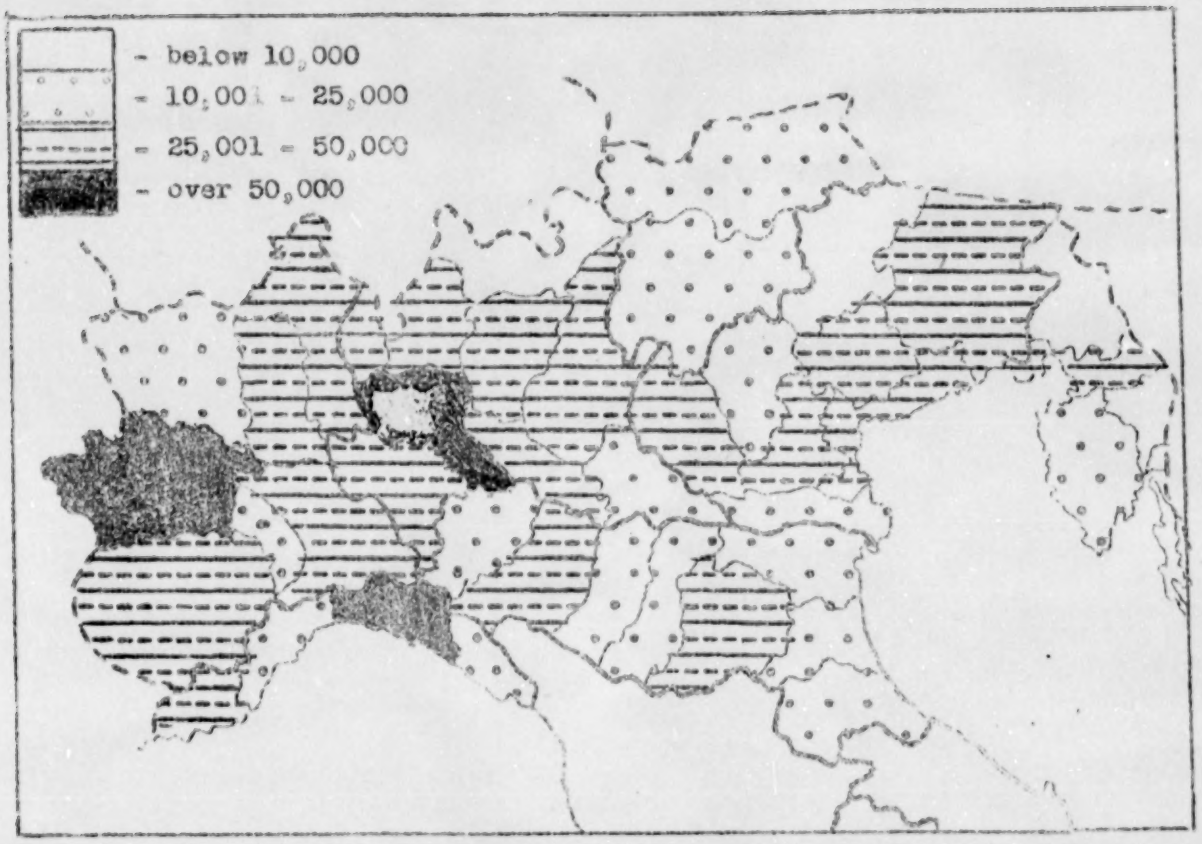


Fig. 29 - Alimentary Paste, Biscuit, and Bread Production, 1937.
(in metric tons)

Appendix 2. (continued)

Appendix 2. LOCATION AND NUMBER OF PRINCIPAL FOOD PROCESSING PLANTS OF NORTH ITALY, 1940

	(1) Flour and rice mills	(2) Sugar refineries	(3) Butter & cheese products	(4) Breweries	(5) Canneries (all kinds)	(6) Oils (non-industrial)	(7) Alimentary paste & biscuit	(8) Ice plants & cold storage (combined)	(9) Ice plants alone	(10) Cold storage alone	(11) Wineries, (vermouth)	(12) Distilleries (liqueurs)	(13) Sausage
I. PIEMONTE													
A. Alessandria													
1. Alessandria		1						1			1	3	
2. Acqui									1	1		2	
3. Casale Monferrato	1		1				4		2			4	
4. Novi Ligure	1								1				
5. Tortona					2				1				
6. Valenza									1				
7. Canelli											4		
B. Aosta													
1. Aosta				1					1				
2. Cuorgne									2			1	
3. Ivrea							3		1				
C. Torino													
1. Torino	2			3	5	2	2	4	5	7	15	5	
2. Pinerolo	1								1			1	
3. Rivarolo Canavese									1		1		
4. Rivoli									1				

Appendix 2. (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
C. La Spezia													
1. La Spezia							3	1	3				
2. Sarzana									1				
D. Savona													
1. Savona	1				2		8	1	1			1	
III. LOMBARDIA													
A. Milano													
1. Milano	6	1	63	3	22	19	3	7	7	1	6		20
2. Abbiategrasso	1			1									
3. Codogno			12							1			
4. Legnano	2								2				
5. Lodi			6						1			1	1
6. Monza	1					1		1				1	1
7. Sesto San Giovanni							1		1			3	
8. Cuggiono						1							
B. Bergamo													
1. Bergamo	5		1	2	1	1			2			4	
C. Brescia													
1. Brescia			7	1	3		4		1	2	3	7	1
2. Orzinuovi			1						1				
3. Desenzano del Garda											1		
4. Iseo											1		
5. Rezzato											1		
6. Salo											1		
7. Vestone											1		
D. Como													
1. Como			9					1	1	1	2	1	
2. Cantu									1	1	1		1
3. Lecco					1				2		1		
4. Mariano Comense											1		

Appendix 2. (continued)

Appendix 2. LOCATION AND NUMBER OF PRINCIPAL FOOD PROCESSING PLANTS OF NORTH ITALY, 1940

	(1) Flour and rice mills	(2) Sugar refineries	(3) Butter & cheese products	(4) Breweries	(5) Canneries (all kinds)	(6) Oils (non-industrial)	(7) Alimentary paste & biscuit	(8) Ice plants & cold storage (combined)	(9) Ice plants alone	(10) Cold storage alone	(11) Wineries, (vermouth)	(12) Distilleries (liqueurs)	(13) Sausage
I. PIEMONTE													
A. Alessandria													
1. Alessandria		1						1			1	3	
2. Acqui									1	1		2	
3. Casale Monferrato	1		1				4		2			4	
4. Novi Ligure	1								1				
5. Tortona					2				1				
6. Valenza									1				
7. Canelli											4		
B. Aosta													
1. Aosta				1					1				
2. Cuorgne									2			1	
3. Ivrea							3		1				
C. Torino													
1. Torino	2			3	5	2	2	4	5	7	15	5	
2. Pinerolo	1								1			1	
3. Rivarolo Canavese									1		1		
4. Rivoli									1				

Appendix 2. (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
D. Asti													
1. Asti					2		5	1	2		2	8	
2. Nizza Monferrato	2								1				
E. Cuneo													
1. Cuneo	1								4	2			
2. Alba	4					5	3		1		1	2	
3. Bra					1		1		2		1		
4. Fossano	1		1						1				
5. Mondovi			1	1	3		3		3				
6. Saluzzo					1								1
7. Savigliano			1						2				
F. Novara													
1. Novara	5					1	6		3				
2. Borgomanero									3				
3. Galliate	2								1				
4. Intra (Verbania)				1					2				
G. Vercelli													
1. Vercelli	1							1	5				
2. Biella				1					2				
II. LIGURIA													
A. Genova													
1. Genova	2	15	2		7	3	4	4	3	2		2	
2. Bolzaneto	1		1									1	
3. Chiavari						3	2	1	1				
4. Rapallo						3	4	1					
B. Imperia													
1. Imperia							2		2	1			
2. Ventimiglia					4		3		2				
3. San Remo									1				
4. Oneglia						4							

Appendix 2. (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
C. La Spezia													
1. La Spezia							3	1	3				
2. Sarzana									1				
D. Savona													
1. Savona	1				2		8	1	1			1	
III. LOMBARDIA													
A. Milano													
1. Milano	6	1	63	3	22	19	3	7	7	1	6		20
2. Abbiategrasso	1			1									
3. Codogno			12							1			
4. Legnano	2								2				
5. Lodi			6						1			1	1
6. Monza	1					1		1				1	1
7. Sesto San Giovanni							1		1			3	
8. Cuggiono						1							
B. Bergamo													
1. Bergamo	5		1	2	1	1			2			4	
C. Brescia													
1. Brescia			7	1	3		4		1	2	3	7	1
2. Orzinuovi			1						1				
3. Desenzano del Garda											1		
4. Iseo											1		
5. Rezzato											1		
6. Salo											1		
7. Vestone											1		
D. Como													
1. Como			9					1	1	1	2	1	
2. Cantu									1	1	1		1
3. Lecco					1				2		1		
4. Mariano Comense											1		

Appendix 2. (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
E. Cremona													
1. Cremona	11		11		4	1	5	1	2			5	1
2. Ca'D'Andrea											2		
3. Casalmaggiore		1											
F. Mantova													
1. Mantova	18	3	18		2		6	1	2	1	1		3
2. Ostiglio		1									1		
3. Sermide		1											
G. Pavia													
1. Pavia	10		15				1		1	1	2	3	
2. Mortara	2		2										
3. Vigevano	3								4		1		
4. Voghera					3		5		1	1	1		
5. Broni											1		
6. Casteggio											2		
7. Garlasco											1		
8. Stradella											1		
H. Sondrio													
1. Sondrio				2					1	1	1	1	3
2. Chiavenna	2		4	1					2			2	
I. Varese													
1. Varese	2		2	1			1		2		2	5	1
2. Busto Arsizio	1								4			1	
3. Castellanza									1	1			
4. Saronno	2						1		4			1	
5. Gallarate											1		
6. Luino											1		
IV. VENEZIA TRIDENTINA													
A. Trento													
1. Trento							1		2	1	5	3	

Appendix 2. (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2. Borgo	1								2				
3. Pergine Valsugana						1	1		1				1
4. Roverto	2					1	1			3	1		
B. Bolzano													
1. Bolzano			2		3				2	1		4	4
2. Bressanone	1												
3. Morano	1			1					1	1			1
4. Villa Bassa						1							
V. VENEZIA GIULIA E ZARA													
A. Trieste													
1. Trieste				1	6	2	5	2	1	2	2	2	2
2. Monfalcone						1			1				
3. Grado					1				1				
B. Fiume													
1. Fiume				1	1		1	1	2				
C. Gorizia													
1. Gorizia									2				
D. Pola													
1. Pola					2			1		2			
2. Capodistria					1								
3. Isola d'Istria	2				3								
4. Lussin Piccolo							1						
5. Rovigno					2				1				
6. Buie d'Istria						1							
E. Zara													
1. Zara							7		1			1	
F. Istria (Parenzo)											1		
VI. EMILIA													
A. Bologna													
1. Bologna	11	1		1	2		16		3	1	14	9	7

Appendix 2. (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2. Imola	3						2		1				
3. Bazzano		1											
4. Molinella		1											
B. Ferrara													
1. Ferrara	4	4	3	5	5			1	2		3	6	
2. Bondeno	4	1							1				
3. Cento	1		3				1		1				
4. Portomaggiore	3				3								
5. Argenta		1											
6. Codigoro		1											
7. Jolanda di Savoia		1											
8. Migliarino		1											
C. Forli													
1. Forli		1			2				3		16		
2. Rimini							1		3				
3. Cesena									2				
D. Modena													
1. Modena				15	5			1	2		5	9	9
2. Carpi						2			2				
3. Mirandola					2								1
4. Castelfranco Dell'Emilia						1		1					
5. Formigine						1							
6. Spilamberto						1							
7. Castelnuovo Rangone												1	
E. Parma													
1. Parma	4	1	2		45		2	1	2	2			10
2. Fidenza			9										
3. Collecchio													6
4. Langhirano													4

Appendix 2. (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
F. Piacenza													
1. Piacenza		2	8		20			1	1				
2. Castel San Giovanni											1		
3. Fiorenzuola d'arda									1				
G. Ravenna													
1. Ravenna	2	2			3			1	2		17		
2. Faenza	1					2			2				
3. Bagnacavallo						1							
H. Reggio Emilia													
1. Reggio Emilia			191		5		4		2		19	7	6
2. Bagnolo In Piano						1							
3. Castelnuovo Sotto						1							
4. Scandiano						1							
5. Guastalla						1							
6. Montecchio						1							
VII. VENEZIA ENGANEA (VENETO)													
A. Venezia													
1. Venezia			2	1	1	1		1	3	1			
2. Cavarzere		1					2		1			1	
3. Chioggia					1			1					
4. Mirano						1		1				1	
5. San Dona di Piave		1							1			1	
6. Mira									1				
7. Portogruaro									1				
8. Porto Marghera						1							
9. Ceggia		1											
B. Belluno													
1. Belluno				1				1		1			
C. Padova													
1. Padova	3	5		1	1	1	5		3	1	1	20	3
2. Este	1	1					1						

Appendix 2. (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
3. Montagnana		1											2
4. Pontelongo		1											
5. Stanghella		1											
D. Rovigo													
1. Rovigo		2			1			1					
2. Adria	2	3							1			1	
3. Arqua Polesine		2											
4. Badia Polesine		1											
5. Ceregnano		1											
6. Costa di Rovigo		1											
7. Ficarolo		1											
8. Lendinara		1											
9. Polesella		1											
10. Porto Tolle		1											
E. Treviso													
1. Treviso	4						9	1	1			18	6
2. Valdobbiadene											1		
3. Castelfranco													1
F. Udine													
1. Udine	8			2			6	1	2				2
2. Cervignano	1						1		1			2	
3. San Vito al Tagliamento		1											
G. Verona													
1. Verona	1	2	5		1	1	1		3	3		9	5
2. Legnago	2	1							1				
3. Illasi											2		
4. Negrar											1		
5. San Martino Buon Albergo						1					1		
6. Soave											2		

Appendix 2. (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
7. Castagnaro						1							
8. Ferrazza Montorio						1							
9. San Pietro di Morulia						1							
10. Cologna Veneta		2											
11. San Bonifaccio		1											
12. Sanquinetto		1											
H. Vicenza													
1. Vicenza			5	1	1	1	5	2				6	
2. Asiago												2	
3. Bassano del Grappa							1		2			1	
4. Thiene	1											2	
5. Schio									1				

Table 1. SIZE OF AGRICULTURAL LAND-HOLDINGS IN NORTH ITALY BY COMPARTIMENTI
(as percentages of total number of holdings)
1929-1930

Compartimento	0-0.5 hectare	.51-1 hectare	1.1-3 hectares	3.1-5 hectares	5.1-10 hectares	10.1-20 hectares	20.1-50 hectares	over 50 hectares
Piemonte	22.1	12.2	30.8	15.8	12.4	4.5	1.6	0.6
Liguria	25.3	13.1	28.4	13.6	13.0	5.1	1.1	0.4
Lombardia	30.1	14.2	32.5	9.7	7.2	3.5	1.8	1.0
Venezia Tridentina	22.9	15.2	31.3	10.6	8.7	5.0	4.1	2.2
Veneto	25.2	12.3	29.6	12.7	11.8	6.1	1.9	.4
Venezia Giulia and Zara	20.3	9.7	24.5	13.6	17.4	10.0	3.6	.9
Emilia	15.4	7.9	19.1	12.5	20.7	17.3	6.3	.8

Source: Italia, Istituto Centrale di Statistica del Regno. Catasto Agrario, 1929, Volume Riassuntivo per il Regno; Parti II - Tavole, Rome 1936.

Table 2. TYPES OF AGRICULTURAL LAND TENURE IN NORTH ITALY BY COMPARTIMENTI
1929-1930

Compartimento	Owner-operators		Renters		Sharecroppers		Intermediary types of tenure	
	Percent of total families	Percent of total area	Percent of total families	Percent of total area	Percent of total families	Percent of total area	Percent of total families	Percent of total area
Piemonte	70.5	70.7	7.7	9.6	3.5	4.5	18.3	15.2
Liguria	68.2	72.3	11.8	7.3	8.7	9.1	11.3	11.3
Lombardia	53.9	54.1	28.9	29.8	5.7	5.7	11.5	10.4
Venezia Tridentina	76.8	89.5	5.8	5.5	2.3	0.7	15.1	4.3
Veneto	56.0	58.0	21.9	18.1	6.2	11.5	12.9	12.4
Venezia Giulia and Zara	84.9	91.8	4.5	1.0	3.5	2.1	7.1	5.1
Emilia	49.6	37.6	15.1	15.6	32.0	43.5	3.3	3.3

Source: Italia, Istituto Centrale di Statistica del Regno. Catasto Agrario, 1929, Volume Riassuntivo per il Regno; Part II - Tavole, Rome 1936.

Table 3. NORTH ITALY, AGRICULTURAL MACHINERY, 1937

	Piemonte	Liguria	Lombardia	Venezia Tridentina	Veneto	Venezia Giulia	Emilia	North Italy	Italy	North Italy percent of total
Tractors	2,941	34	5,912	28	7,680	215	8,610	25,420	35,763	71
Threshing machines	4,260	644	4,031	4,053	4,785	1,219	4,229	23,221	36,284	64
Husking machines	1,014	20	2,166	7	1,333	9	971	5,520	6,851	80
Stationary motors:										
Steam	1,013	12	1,260	4	874	1	1,085	4,249	7,285	58
Internal combustion	2,066	243	2,933	76	3,813	276	2,866	12,273	21,491	57
Percent of all Italy:										
Tractors	8.2	0.1	16.5	0.1	21.5	0.6	24.1	71		
Threshing machines	11.7	1.8	11.1	11.2	13.2	3.3	11.6	64		
Husking machines	14.8	0.3	31.6	0.1	19.4	0.1	14.1	80		
Stationary motors:										
Steam	13.9	0.2	17.3	0.1	12.0	.01	14.9	58		
Internal combustion	9.6	1.1	13.6	0.4	17.7	1.3	13.3	57		

Source: Annuario Statistico dell' Agricoltura Italiana, 1936-1938.

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Table 4. PURE PLANT FOOD CONTENT OF COMMERCIAL FERTILIZERS CONSUMED IN NORTH ITALY
Average 1936-1940

		Piemonte	Liguria	Lombardia	Venezia Tridentina	Veneto	Venezia Giulia	Emilia	North Italy	Italy
Phosphoric oxide	1,000 metric tons:	30.7	0.9	41.5	1.6	35.8	2.3	45.6	158.4	275.9
(P_2O_5)	Percent of all Italy:	11.1	0.3	15.0	0.6	13.0	0.8	16.5	57	
Pure nitrogen	1,000 metric tons:	20.7	1.0	26.8	1.0	13.1	0.7	17.5	80.8	123.6
(N)	Percent of all Italy:	16.8	0.8	21.8	0.8	10.6	0.6	14.2	65	
Pure potash	1,000 metric tons:	5.9	0.2	5.3	0.6	3.2	0.3	1.4	16.9	19.3
(K_2O)	Percent of all Italy:	30.6	1.0	27.5	3.1	16.5	1.6	7.3	88	

Source: Annuario Statistico Italiano

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Table 5. CONSUMPTION OF COMMERCIAL FERTILIZER IN NORTH ITALY
Average 1936-1940
(1,000 metric tons)

		Piemonte	Liguria	Lombardia	Venezia Tridentina	Veneto	Venezia Giulia	Emilia	North Italy	Italy	North Italy as a percentage of Italy
Phosphate fertilizer	Superphosphate	162.4	5.3	221.4	10.8	191.4	13.1	231.3	835.7	1,488.5	56
	Ground natural phosphates	3.3	- -	3.3	0.3	1.0	0.1	2.7	10.7	12.7	84
	Basic slag	0.5	- -	0.7	0.1	0.2	- -	5.8	7.3	7.8	94
Nitrogenous fertilizer	Ammonium sulphate	48.7	3.1	60.1	2.9	17.3	1.3	16.8	150.2	237.3	63
	Cyanamide of calcium	36.3	0.5	37.3	0.3	15.2	0.6	40.6	130.8	186.2	70
	Nitrate of calcium	13.2	0.3	26.9	0.9	17.6	1.0	22.2	82.1	126.2	65
	Nitrate of soda	5.5	0.6	10.1	0.4	8.9	0.4	8.0	33.9	44.5	76
	Nitrate of ammonia	4.8	0.1	6.9	0.4	3.6	- -	3.6	19.4	35.6	54
Potash	Potash salts	7.0	0.5	5.7	0.8	4.4	0.4	1.4	20.2	23.7	85
Composite fertilizer	Biammonium phosphate	1.9	0.2	1.2	0.2	2.4	0.2	2.5	8.6	23.5	37

Source: Annuario Statistico Italiano

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Table 6. ANNUAL CONSUMPTION OF PLANT SPRAYS IN NORTH ITALY
Average 1936-1938
(metric tons)

	Piemonte	Liguria	Lombardia	Venezia Tridentina	Veneto	Venezia Giulia	Emilia	North Italy	Italy	North Italy as a percentage of all Italy
Arsenates and arsenites	42	30	32	110	57	10	104	385	956	40
Sulphides	99	17	78	1,029	32	2	109	1,366	2,236	61
Tar oil and tar oil products	41	14	135	826	71	14	118	1,219	1,274	95
Phosphide, chloride, and sulphate of zinc	14	--	16	---	5	1	---	36	38	94
Nicotine products	34	123	53	153	29	6	80	478	725	65
Quassio wood	5	16	3	1	77	-	182	284	309	91
Quassio extract	3	2	1	---	5	-	8	19	28	67
Pyrethrum	1	5	2	---	3	-	2	13	33	39
Rotenone	1	1	1	4	1	-	---	8	9	88
Fluorine silicate	2	1	14	---	6	-	1	24	28	85
Oxychloride of copper	1,191	438	373	199	358	109	655	3,323	7,088	46
Sulphur	4,115	1,704	1,226	811	2,968	675	2,992	14,491	32,396	44
Copper-sulphur	1,131	311	560	35	447	492	954	3,930	9,871	39
Iron sulphate	119	200	151	3	80	11	220	784	1,706	45
Copper sulphate	15,129	2,088	7,891	2,339	9,894	827	25,960	64,128	109,025	58

Source: Annuario Statistico dell' Agricoltura Italiana

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Table 7. NORTH ITALY, CROP PRODUCTION
(1,000 metric tons)

	Compartment	Average 1936-40[a]	Percent of all Italy	1942 production[b]	1943 production[b]
Population (1,000) (1936)	Piemonte	3,506	8.1		
	Liguria	1,467	3.4		
	Lombardia	5,836	13.6		
	Venezia Tridentina	669	1.5		
	Veneto	4,288	10.0		
	Venezia Giulia	977	2.3		
	Emilia	3,339	7.8		
	North Italy	20,082	46.7		
	Italy	42,994	100.0		
Wheat	Piemonte	577	7.8	554	585
	Liguria	25	.3	21	22
	Lombardia	733	9.8	696	735
	Venezia Tridentina	24	.3	21	22
	Veneto	636	8.5	604	638
	Venezia Giulia	38	.5	36	38
	Emilia	1,056	14.2	1,008	1,065
	North Italy	3,088	41.4	2,939	3,105
	Italy	7,449	100.0	7,100	7,500

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Table 7. NORTH ITALY, CROP PRODUCTION (continued)
(1,000 metric tons)

Compartment		Average 1936-40[a]	Percent of all Italy	1942 production[b]	1943 production[b]
Corn	Piemonte	384	12.5	388	375
	Liguria	14	.4	12	12
	Lombardia	854	27.7	859	831
	Venezia Tridentina	30	1.0	31	30
	Veneto	804	26.1	809	783
	Venezia Giulia	49	1.6	50	48
	Emilia	221	7.1	220	213
	North Italy	2,354	76.4	2,368	2,292
	Italy	3,080	100.0	3,100	3,000
Oats	Piemonte	26	4.6	26	26
	Liguria	0	0	0	0
	Lombardia	30	5.2	29	29
	Venezia Tridentina	3	.5	3	3
	Veneto	13	2.3	13	13
	Venezia Giulia	3	.6	3	3
	Emilia	12	2.1	12	12
	North Italy	87	15.4	86	86
	Italy	569	100.0	560	560

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Table 7. NORTH ITALY, CROP PRODUCTION (continued)
(1,000 metric tons)

	Compartment	Average 1936-40[a]	Percent of all Italy	1942 production[b]	1943 production[b]
Rye	Piemonte	63	44.0	65	67
	Liguria	0	.3	0	1
	Lombardia	25	17.6	26	27
	Venezia Tridentina	19	13.2	20	20
	Veneto	6	3.8	6	6
	Venezia Giulia	3	2.2	3	3
	Emilia	3	2.2	3	3
	North Italy	120	83.3	124	126
	Italy	144	100.0	149	152
Barley	Piemonte	2	.8	2	2
	Liguria	0	0	0	0
	Lombardia	0	0	0	0
	Venzia Tridentina	6	2.5	6	6
	Veneto	2	1.1	3	3
	Venezia Giulia	6	2.5	6	6
	Emilia	13	6.0	15	16
	North Italy	30	13.2	34	35
	Italy	226	100.0	257	260

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Table 7. NORTH ITALY, CROP PRODUCTION (continued)
(1,000 metric tons)

	Compartment	Average 1936-40[a]	Percent of all Italy	1942 production[b]	1943 production[b]
Rice	Piemonte	371	48.4	402	378
	Liguria	0	0	0	0
	Lombardia	303	39.5	328	308
	Venezia Tridentina	0	0	0	0
	Veneto	30	3.9	32	30
	Venezia Giulia	0	0	0	0
	Emilia	61	8.0	66	62
	North Italy	765	99.8	828	798
	Italy	766	100.0	830	800
Potatoes	Piemonte	349	11.7	445	363
	Liguria	100	3.4	129	105
	Lombardia	263	8.8	334	273
	Venezia Tridentina	157	5.3	201	164
	Veneto	243	8.2	312	254
	Venezia Giulia	184	6.2	236	192
	Emilia	167	5.6	213	174
	North Italy	1,463	49.2	1,870	1,525
	Italy	2,974	100.0	3,800	3,100

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Table 7. NORTH ITALY, CROP PRODUCTION (continued)
(1,000 metric tons)

	Compartment	Average 1936-40[a]	Percent of all Italy	1942 production[b]	1943 production[b]
Sugar beets	Piemonte	53	1.5	52	52
	Liguria	0	0	0	0
	Lombardia	173	4.8	168	168
	Venezia Tridentina	0	0	0	0
	Veneto	1,547	42.6	1,491	1,491
	Venezia Giulia	5	.1	0	0
	Emilia	1,504	41.5	1,452	1,452
	North Italy	3,283	90.5	3,168	3,168
	Italy	3,628	100.0	3,500[c]	3,500[d]
Dried legumes	Piemonte	39	4.3	24	
	Liguria	2	.2	1	
	Lombardia	7	.8	4	
	Venezia Tridentina	3	.3	2	
	Veneto	21	2.4	13	
	Venezia Giulia	5	.6	3	
	Emilia	19	2.1	12	
	North Italy	97	10.7	59	
	Italy	902	100.0	550	

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Table 7. NORTH ITALY, CROP PRODUCTION (continued)
(1,000 metric tons)

	Compartment	Average 1936-40[a]	Percent of all Italy	1942 production[b]	1943 production[b]
Wine (1,000 hectoliters)	Piemonte	3,821	10.5	3,990	4,515
	Liguria	497	1.4	532	602
	Lombardia	2,241	6.1	2,318	2,623
	Venezia Tridentina	578	1.6	608	688
	Veneto	2,709	7.7	2,926	3,311
	Venezia Giulia	550	1.5	570	645
	Emilia	4,476	12.2	4,636	5,246
	North Italy	14,952	41.0	15,508	17,630
	Italy	36,442	100.0	38,000	43,000
Olive oil	Piemonte	0	0	0	
	Liguria	15.4	6.9	18.3	
	Lombardia	.6	.3	.7	
	Venezia Tridentina	.2	.1	.2	
	Veneto	.7	.3	.7	
	Venezia Giulia	1.1	.5	1.3	
	Emilia	.7	.3	.7	
	North Italy	18.7	8.4	22.3	
	Italy	222.4	100.0	266.0	

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Table 7. NORTH ITALY, CROP PRODUCTION (continued)
(1,000 metric tons)

	Compartment	Average 1936-40[a]	Percent of all Italy	1942 production[b]	1943 production[b]
Cabbage and cauliflower	Piemonte	36	5.0		
	Liguria	39	5.4		
	Lombardia	54	7.4		
	Venezia Tridentina	19	2.6		
	Veneto	58	8.1		
	Venezia Giulia	18	2.4		
	Emilia	11	1.5		
	North Italy	235	32.4		
	Italy	726	100.0		
Onions and garlic	Piemonte	11	7.7		
	Liguria	4	2.7		
	Lombardia	13	8.5		
	Venezia Tridentina	0	0		
	Veneto	17	11.5		
	Venezia Giulia	0	0		
	Emilia	26	17.2		
	North Italy	71	47.9		
	Italy	149	100.0		

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Table 7. NORTH ITALY, CROP PRODUCTION (continued)
(1,000 metric tons)

	Compartment	Average 1936-40[a]	Percent of all Italy	1942 production[b]	1943 production[b]
Green beans and peas	Piemonte	6	3.0		
	Liguria	19	9.3		
	Lombardia	8	3.8		
	Venezia Tridentina	1	.3		
	Veneto	11	5.2		
	Venezia Giulia	3	1.6		
	Emilia	8	4.1		
	North Italy	56	27.3		
	Italy	204	100.0		
All fresh vegetables	North Italy	362	33.6		
	Italy	1,079	100.0		
Tomatoes	Piemonte	14	1.5	15	14
	Liguria	51	5.1	51	48
	Lombardia	20	2.0	20	19
	Venezia Tridentina	1	.1	1	1
	Veneto	11	1.1	11	10
	Venezia Giulia	5	.5	5	5
	Emilia	271	27.3	273	259
	North Italy	374	37.6	376	357
	Italy	995	100.0	1,000	950

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Table 7. NORTH ITALY, CROP PRODUCTION (continued)
(1,000 metric tons)

Compartment		Average 1936-40[a]	Percent of all Italy	1942 production[b]	1943 production[b]
Melons and watermelons	Piemonte	4	1.0		
	Liguria	0	0		
	Lombardia	38	10.0		
	Venezia Tridentina	0	0		
	Veneto	43	11.5		
	Venezia Giulia	0	0		
	Emilia	72	18.9		
	North Italy	157	41.6	100	
	Italy	378	100.0		
Fresh fruits	Piemonte	139	13.7	120	
	Liguria	54	5.3	47	
	Lombardia	33	3.2	28	
	Venezia Tridentina	106	10.4	92	
	Veneto	85	8.4	74	
	Venezia Giulia	14	1.4	12	
	Emilia	141	13.9	122	
	North Italy	572	56.3	495	
	Italy	1,016	100.0	880	

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Table 7. NORTH ITALY, CROP PRODUCTION (continued)
(1,000 metric tons)

	Compartment	Average 1936-40[a]	Percent of all Italy	1942 production[b]	1943 production[b]
Tobacco	Piemonte	.4	1.1		.5
	Liguria	0	0		0
	Lombardia	1.2	3.2		1.5
	Venezia Tridentina	.7	1.9		.8
	Veneto	8.4	22.8		9.9
	Venezia Giulia	.1	.3		.1
	Emilia	2.4	6.5		2.8
	North Italy	13.2	35.8		15.6
	Italy	36.9	100.0		43.5

a Annuario Statistico Italiano.
b Estimates for North Italian compartimenti derived by applying pre-war proportions to current estimates for all Italy. The latter are based on intelligence reports.
c Estimated raw sugar content of beets: 17 percent. Estimated raw sugar production: 441,000 metric tons.
d Estimated raw sugar content of beets: 14 percent. Estimated raw sugar production, allowing 500,000 metric tons of beets for alcohol production, = 3,000,000 metric tons x 14 percent = 420,000 metric tons, of which 90 percent = 378,000 metric tons located in North Italy.

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Table 8. NORTH ITALY, LIVESTOCK NUMBERS
March 1940
(1,000 head)

	Piemonte	Liguria	Lombardia	Venezia Tridentina	Veneto	Venezia Giulia	Emilia	North Italy	Italy
Horses	60	5	159	10	67	8	62	371	761
Asses	10	6	36	2	38	14	28	134	789
Mules	18	9	10	2	8	1	5	53	414
Cattle	1,041	89	1,422	205	1,175	138	1,306	5,376	7,790
Pigs	175	10	449	44	332	69	490	1,569	3,212
Sheep	175	69	123	78	135	147	230	957	9,968
Goats	91	22	57	44	61	23	12	310	1,829
Percent of all Italy:									
Horses	7.9	0.6	20.8	1.3	8.8	1.	8.1	49	
Asses	1.3	0.8	4.6	0.3	4.8	1.8	3.5	17	
Mules	4.3	2.2	2.4	0.5	1.9	0.2	1.2	13	
Cattle	13.4	1.1	18.3	2.6	15.1	1.8	16.8	69	
Pigs	5.4	0.3	13.9	1.4	10.3	2.1	15.2	49	
Sheep	1.7	0.7	1.2	0.8	1.4	1.5	2.3	10	
Goats	5.0	1.2	3.1	2.4	3.3	1.3	0.7	17	

Source: Annuario Statistico Italiano

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Table 9. NORTH ITALY, ANIMAL PRODUCTS
(1,000 metric tons)

Commodity	Average[a] 1936-38	Percent of Italy	Estimated production 1942
Beef and veal			
North Italy[b]	228	69	194
Italy	330	100	280[c]
Pork			
North Italy[b]	114	49	64
Italy	234	100	130[c]
Mutton			
North Italy[b]	5	10	4
Italy	50	100	40[c]
Horse flesh			
North Italy[b]	6	49	5
Italy	12	100	10[c]
Pluck			
North Italy[b]	36	50	27
Italy	71	100	54[c]
Rabbits			
North Italy[b]	34	60	54
Italy	57	100	90[d]
Poultry and game			
North Italy[b]	50	65	98
Italy	78	100	150[e]
All meat			
North Italy[b]	473	58	445
Italy	832	100	750
Lard and slaughter fat			
North Italy[b]	77	50	65
Italy	154	100	130[c]
Fish			
North Italy[g]	60	33	45
Italy	180	100	135
Eggs			
North Italy[g]	215	65	182
Italy	329	100	280[e]
Fluid milk[f]			
North Italy[h]	24.4	75	17.3
Italy	32.4	100	23.1[c]
Butter			
North Italy[h]	45	89	36
Italy	50	100	40[c]
Cheese			
North Italy[h]	146	68	136
Italy	215	100	200[c]

a Based on Barbieri, op. cit.
b Proportions for North Italy computed on basis of distribution of livestock.
c Based on estimates by MEW.
d Based on central-market receipts.
e Based on intelligence and Axis newspaper reports.
f Million hectoliters.
g Proportions for North Italy estimated.
h Proportions for North Italy based on results of special inquiry, reported in CAD Handbook on Italy, Section 7, by compartimenti.

Table 10. FOOD BALANCE OF NORTH ITALY. SUPPLIES AVAILABLE FOR HUMAN CONSUMPTION, FARM FAMILY CONSUMPTION, AND RATIONED NON-FARM CONSUMPTION

Commodity	Year	Production (1,000 metric tons)	Feed and industrial uses		Waste and seed		Net production	Milling offals		Supplies available for human consumption (1,000 metric tons)
			Percent	Total	Percent	Total		Percent of net	Total	
(1)	(2)	(3)	(4)		(5)		(6)	(7)		(8)
Wheat	1943-44	3,105	--	---	14	435	2,670	12	320	2,350
Corn	1943-44	2,292	25	573	6	137	1,582	25	395	1,187
Rye	1943-44	125	10	12	13	16	97	20	19	78
Rice	1943-44	800	--	---	6	48	752	33	248	504
Potatoes	1943-44	1,525	10	152	25	380	993	--	---	993
Dried vegetables	1942-43	59	25	15	15	9	35	--	---	35
Fresh vegetables	1942-43	330	--	---	20	66	264	--	---	264
Tomatoes	1943-44	357	--	---	10	36	321	--	---	321
Fresh fruit[a]	1942-43	595	--	---	20	119	476	--	---	476
Wine[b]	1943-44	17.6	c	c	--	---	17.6	--	---	17.6
Olive oil	1942-43	22.3	--	---	--	---	22.3	--	---	22.3
Lard and slaughter fat	1942-43	65	--	---	--	---	65	--	---	65
Butter	1942-43	36	--	---	--	---	36	--	---	36
Meat	1942-43	445	--	---	--	---	445	--	---	445
Cheese	1942-43	136	--	---	--	---	136	--	---	136
Fish	1942-43	45	--	---	--	---	45	--	---	45
Eggs	1942-43	182	--	---	--	---	182	--	---	182
Milk[b]	1942-43	17.3	--	---	--	---	17.3	--	---	17.3
Sugar	1943-44	378[d]	--	---	--	---	378	5[e]	19	359

a Including melons and watermelons. b Million hectoliters. c Quantity used in alcohol production unknown.
d Raw sugar. e Loss in refining.

Columns 9, 10, 11, 12, 13, 14, 15, 16, and 17 on page 127.

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Table 10. FOOD BALANCE OF NORTH ITALY. SUPPLIES AVAILABLE FOR HUMAN CONSUMPTION, FARM FAMILY CONSUMPTION, AND RATIONED NON-FARM CONSUMPTION (continued)

Commodity	Supplies available for human consumption (1,000 metric tons)	Farm consumption		Supplies available for non-farm human consumption (1,000 metric tons)	Potential non-farm consumption			Rations per capita				Total non-farm consumption of rations (1,000 metric tons per annum)		Balance	
		Total (1,000 metric tons)	Per capita per day (grams)		Per capita per annum (kg.)	Per capita per day (grams)		Grams/day		Kg./year					
(1)	(8)	(9)	(10)	(11)	(12)	(13)		(14)		(15)		(16)		(17)	
								A	B	A	B	A	B	A	B
Wheat	2,350	1,130	369	1,220	105.2	288									
Corn	1,187	855	279	332	28.6	78	453	290	408	106	149	1,230	1,720	+692	+202
Rye	78	40	13	38	3.3	9									
Rice	504	172	56	332	28.6	78									
Potatoes	993	501	163	492	42.4	116		84	122	31	45	360	515	+132	-495
Dried vegetables	35	15	5	20	1.7	5									
Fresh vegetables	264	111	36	153	13.2	36									
Tomatoes	321	135	44	186	16.0	44									
Fresh fruit[a]	476	200	65	276	23.8	65									
Wine[b]	17.6	7.8	0.25[c]	8.3	72[c]	0.20[c]									
Olive oil	22.3	60	19	38[d]	[d]	[d]									
Lard and slaughter fat	65	27	10	38	3.3	9	5	15	15	5.5	5.5	64	64	-43	-43
Butter	36	15	5	21	1.8	5									
Meat	445	211	69	234	20.2	55	71	30	30	11.0	11.0	128	128	+176	+176
Cheese	136	66	22	70	6.0	16									
Fish	45	9[e]	3	36	3.1	8									
Eggs	182	53	17	129	11.1	30									
Milk[b]	17.3	9.3	0.30[c]	8.0	69[c]	0.19[c]									
Sugar	359	35	12	324	27.9	76		21	15	7.7	5.5	89	64	+235	+260

a Including melons and watermelons. b Million hectoliters. c Liters
d 38,000 metric tons of farm consumption plus all non-farm consumption to be supplied from other parts of country or from abroad.
e Dried fish only. f Farm population: 8,400,000 (42 percent of total).
g Non-farm population: 11,600,000 (58 percent of total).

A = National rations, 1943. } See Table 13
B = OFRRO, Basic Relief Ration. }

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Table 11. PROBABLE MAXIMUM LEGAL RETENTIONS OF SELF-SUPPLIERS, NORTH ITALY, MARCH 1943[a]

Commodity	Kilograms per capita	Grams per day per capita	Calories
Wheat flour[b,c]	105	288	1,028
Corn flour[b,c]	80	219	782
Potatoes[d]	85	233	191
Dried vegetables[d]	7	19	47
Hog meat[c,e]	14	38	88
Hog fat[c,e]	7	19	165
Total self-suppliers' rations			2,301
Sugar	7.7	21	86
Locally rationed and non-rationed foodstuffs			450
Total intake			2,837

a Based on self-suppliers' rations. See section F-3.

b Alternative. Divided between wheat and corn approximately according to normal dietary habits.

c Based on assumption that commodity is produced on every farm.

d Based on assumption that every second farmer grows potatoes, dried vegetables.

e One pig assumed to be allowed to five persons, on the average.

Table 12. PRE-WAR CONSUMPTION PER ANNUM BY FARM FAMILIES IN NORTH ITALY
(1,000 metric tons)

Tenure group	Total number of consumption units	Wheat flour	Corn meal	Rice	Alimentary paste	Potatoes	Milk (hectoliters)	Cheese	Eggs	Meat	Dried fish	Wine (hectoliters)	Oil (hectoliters)	Sugar
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Owner-operators	3,600,000	374	217	82	189	380	6,510	35	33	118	1	3,880	370	23
Tenants	900,000	135	90	29	90	67	320	6	9	18	1	1,800	130	7
Shareeroppers	2,170,000	256	433	24	156	89	2,410	25	8	69	5	1,610	140	2
Permanent hired laborers	820,000	60	156	49	7	16	830	6	9	31	4	490	40	4
Day laborers	850,000	108	122	21	19	44	570	7	4	15	-	1,500	110	6
Total	8,340,000[a]	933	1,018	205	461[b]	596	11,080	79	63	251	11	9,280	790	42
Total, adjusted[c]	7,000,000	1,130[d]	855	172	[e]	501	9,310	66	53	211	9	7,800	664	35

a This corresponds to a total farm population of 10,000,000. Actual farm population (families whose head is engaged in farming): 8,400,000.
b Pasta assumed to contain 10 percent non-wheat ingredients; net wheat content: 415,000 metric tons.
c Obtained by applying reduction factor, $\frac{8,400,000}{10,000,000}$.
d Wheat flour, plus wheat contained in pasta (90 percent).
e See wheat.

Source: Annuario Statistico dell' Agricoltura Italiana

Table 13. NORTH ITALY -- PER CAPITA RATIONS
(grams per day)

Commodity	National ration	OFRRO basic relief ration
(1)	(2)	(3)
Grains and flour	210[a,b]	312
Alimentary paste and rice	88[a,b]	71
Total cereal foodstuffs[c]	290	376
Potatoes	84[b]	-
Pulses	d	113
Meat and cheese	30	28
Fats and oils	15[b]	14
Sugar	21	14

a Weighted average (see Table 14).
b Including canteen distribution (see text).
c Ten percent deducted from pasta weight to allow for non-cereal content of pasta.
d Rationed locally.

Table 14. NORTH ITALY -- WEIGHTED AVERAGE RATIONS, 1943

(1) Bread and flour

Consumer category	Ration (grams /day)	Population in category (estimated)
Normal consumer	150	7,550,000
Light worker	250	2,100,000
Heavy worker	350	1,250,000
Very heavy worker	450	500,000
Expectant and nursing mothers	300	200,000
Average (weighted)	205	Total: 11,600,000

(2) Pasta and rice

Consumer category	Ration (grams /day)	Population in category (estimated)
Normal consumer	71	8,690,000
Heavy worker	93	1,750;000
Children under three	107	1,160,000
Average (weighted)	78	Total: 11,600,000

Table 15. NUTRITIVE VALUE OF DAILY DIET

Nutrient	Farm North Italy[a]	Potential non-farm North Italy[a]	Farm (all Italy)[b]
(1)	(2)	(3)	(4)
Calories	3,775	2,750	3,100
Proteins (grams)	120	85	105
Fats (grams)	80	50	60
Carbohydrates (grams)	600	455	490

a Based on 1943-44 production, except as specified in Table 10.

b 1942-43.

Table 16. FOODSTUFFS REQUIRED FOR EMERGENCY FEEDING OF POPULATION OF LARGE URBAN CENTERS

Compartimento	City	Population (000)	Calories required for two weeks (1,000,000)[a]	Metric tons[b] of basic relief ration required for two weeks	Metric tons[c] of supplementary foodstuff required	Total tonnage
Piemonte	Turin	712	19,936	5,648	542	6,190
	Alessandria	84	2,352	666	64	730
	Novara	68	1,904	539	52	591
	Asti	50	1,400	397	38	435
	Total	914	25,592	7,250	696	7,946
Liguria	Genoa	670	18,760	5,314	510	5,824
	La Spezia	119	3,320	944	91	1,035
	Others	243	6,804	1,928	185	2,113
	Total	1,032	28,884	8,186	786	8,972
Lombardia	Milan	1,270	35,560	10,074	967	11,041
	Brescia	138	3,864	1,095	105	1,200
	Bergamo	97	2,716	769	74	843
	Monza	70	1,960	555	53	608
	Cremona	69	1,932	547	53	600
	Como	58	1,624	460	44	504
	Pavia	57	1,596	452	43	495
	Total	1,759	49,252	13,952	1,339	15,291

a Not including those derived from supplementary foodstuffs.
b OFRRO Basic Relief Ration.
c Based on assumption that supplementary foodstuffs for special groups amount to 16 ounces per capita per day.

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Table 16. FOODSTUFFS REQUIRED FOR EMERGENCY FEEDING OF POPULATION OF LARGE URBAN CENTERS (continued)

Compartimento	City	Population (000)	Calories required for two weeks (1,000,000) [a]	Metric tons [b] of basic relief ration required for two weeks	Metric tons [c] of supplementary foodstuff required	Total tonnage
Venezia Tridentina	Bolzano	68	1,904	539	52	591
	Trento	60	1,680	476	46	522
	Total	128	3,584	1,015	98	1,113
Veneto	Venice	284	7,952	2,253	216	2,469
	Verona	167	4,676	1,325	127	1,452
	Padova	154	4,312	1,222	117	1,339
	Vicenza	74	2,072	587	56	643
	Udine	68	1,904	539	52	591
	Treviso	60	1,680	476	46	522
	Total	807	22,596	6,402	614	7,016
Venezia Giulia	Trieste	257	7,196	2,038	196	2,234
	Fiume and surroundings	60	1,680	476	46	522
	Pola	50	1,400	397	38	435
	Gonzia	45	1,260	357	34	391
	Total	412	11,536	3,268	314	3,582

a Not including those derived from supplementary foodstuffs.
b OFRRO Basic Relief Ration.
c Based on assumption that supplementary foodstuffs for special groups amount to 16 ounces per capita per day.

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Table 16. FOODSTUFFS REQUIRED FOR EMERGENCY FEEDING OF POPULATION OF LARGE URBAN CENTERS (continued)

Compartimento	City	Population (000)	Calories required[a] for two weeks (1,000,000)	Metric tons[b] of basic relief ration required for two weeks	Metric tons[c] of supplementary foodstuff required	Total tonnage
Emilia	Bologna	314	8,792	2,491	239	2,730
	Ferrara	129	3,612	1,023	98	1,121
	Modena	108	3,024	857	82	939
	Reggio	105	2,940	833	80	913
	Ravenna	85	2,380	674	65	739
	Parma	82	2,296	650	62	712
	Forli	73	2,044	579	56	635
	Piacenza	71	1,988	563	54	617
	Rimini	70	1,960	555	53	608
	Cesena	68	1,904	539	52	591
	Total	1,105	30,940	8,764	841	9,605
	Grand total -- North Italy	6,157	172,384	48,837	4,688	53,525

a Not including those derived from supplementary foodstuffs.
b OFRRO Basic Relief Ration.
c Based on assumption that supplementary foodstuffs for special groups amount to 16 ounces per capita per day.

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Table 17. FOOD PROCESSING IN NORTH ITALY BY COMPARTIMENTI 1936-1937

	Piemonte	Liguria	Lombardia	Venezia Tridentina	Veneto	Venezia Giulia	Emilia	Total
Flour (in metric tons)	622,570	261,469	932,503	44,222	954,656	34,173	838,271	3,687,864
Alimentary paste (in metric tons)	302,113	149,620	431,926	32,596	200,033	60,220	183,032	1,359,540
Sugar (in metric tons)	45,271	722,150	228,532	-	854,275	1,266,915	1,692,959	4,810,102
Canning (in metric tons)	3,977	1,535	10,611	2,979	5,319	1,705	77,087	103,213
Beer (in hectoliters)	35,594	26,184	77,366	25,840	97,029	120,672	7,089	389,774
Wine (in hectoliters)	1,005,874	37,569	976,823	409,211	1,039,028	417,174	1,994,480	5,880,159
Distillery products (in hectoliters)	43,920	1,770	62,123	1,337	34,686	15,040	67,867	226,743
Meat processing (in metric tons)	7,515	736	17,814	826	2,061	370	8,372	37,694
Butter and cheese (in metric tons)	23,993	659	96,389	6,586	29,235	1,368	48,422	206,652

Source: Italia, Istituto Centrale del Regno. Censimento Industriale e Commerciale, 1937-40, Vol. 1, Part 1, and Monografia II, Le Industrie del Malto, della Birra e delgi Estratti di Malto.

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Appendix 4. PRE-WAR FOOD CONSUMPTION OF NORTH ITALIAN FARM FAMILIES

The following estimates are based on a special inquiry undertaken by the National Institute of Agricultural Economics.[1]

The sample of families, has apparently been selected without any of the safeguards that might insure its being representative of the farm population in general. Samples of this kind usually contain a higher-than-average proportion of the more progressive and well-to-do farmers. The stratification of the sample by regions and tenancy groups,[2] on the other hand, would tend to reduce the bias. It is thought, furthermore, that even if this sample is biased upward with regard to pre-war farm consumption, it may closely approach the level of consumption prevailing at the present time, given the progressive breakdown of governmental controls and the unprecedented decline in the production of industrial consumers' goods. It is likely that with the event of the occupation, Allied authorities will be no more successful in rationing food consumption on farms than the fascist regime — if indeed such an attempt is made at all.

The procedure of estimating farm consumption from the pre-war sample is shown in Table 12. In this table, the sample is stratified according to tenancy groups; in view of the small size of the sample, no attempt is made at regional stratification. The number of families in each

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1. Reproduced in Annuario Statistico dell' Agricultura Italiana. page 441.
2. Regions represented: mountains and foothills of Piemonte, Rivera di Ponente, low plains of Lombardia, upper Adige; Marca Trevigiana, and Euilian Plain. Tenancy groups: (1) owner-operator, tenant, share-cropper, permanent farm hand, day laborer

stratum (tenancy group) was estimated from data shown in Annuario Statistico dell' Agricultura Italiana.[1] The number of families was then multiplied by the average number of consumption units per family, as shown in the inquiry. The result of this operation is shown on column 2 of Table 12. The total consumption, in 1,000 metric tons, of each tenancy group was then computed by multiplying the annual consumption of each commodity per consumption unit[2] by the total number of consumption units in each group. The totals of each column would, then, show the total farm consumption of the principal foodstuffs. However, the total number of consumption units obtained by the expansion of the sample (8,340,000), corresponding to a population of 10 million, exceeds the total farm population (8.4 million), indicating that the average size of the families included in the inquiry is slightly above average. Applying a reduction factor $\frac{8.4 \text{ millimeters}}{10 \text{ millimeters}}$ the adjusted total farm consumption of the principal foodstuffs is found in the bottom row of Table 12.[3]

It is well to keep in mind that because of the selectivity of the sample this estimate of farm food consumption is a maximum estimate. However, given the existing ineffectiveness of the rationing system

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1. Number of families is given for the operator, share-cropper, and laborer groups. The operator group was split into owner-operators and tenants according to the statistics of "gainfully employed in agriculture." The same procedure was applied to distribute the laborers into the permanent and day laborer categories.
2. Shown in Annuario Statistico dell' Agricultura Italiana. P. 441.
3. Owing to the small size of the sample, the apparent differences in the consumption pattern of tenancy groups and regions may be largely fortuitous.

and the shortage of consumer goods that could be offered to farmers in exchange for foodstuffs, it is better to be on the cautious side.

For food items not included in the inquiry, the estimated supplies were allocated to the farm and non-farm population, respectively, in proportion to their relative numbers.[1]

1. Except for rye, where the existing supplies were divided about equally between the two groups. See Table 10.

Appendix 5. BIBLIOGRAPHY

1. General References

Civil Affairs Handbook on Italy, Section 7; Agriculture (preliminary draft), n.d. A wide range of valuable agricultural information for each compartment of Italy is presented in text, maps, and tables.

British Basic Handbook on Italy, Part II, Economic Structure, May 1943. Contains a brief survey of Italian agriculture.

Italy's Food in War and Peace, Foreign Commerce Weekly, 28 August 1943.

Enciclopedia Italiana

2. Statistical Reference (production and consumption).

Italia, Istituto Centrale di Statistica del Regno. Catasto Agrario, 1929. Volume Riassuntivo per il Regno: Parti II - Tavole, Rome, 1936. Tabular summary volume of a series of detailed surveys of agriculture by compartment, province, and the small agricultural regions within the provinces.

Italia, Istituto Centrale di Statistica del Regno Annuario dell'Agricoltura Italiana 1936-1938. Vol. 1, 1939, Rome, 1940, 529 pp. and appendix. Standard source of agricultural statistics, by provinces.

International Institute of Agriculture, International Yearbook of Agricultural Statistics.

Barberi, Benedetto. Indagine Statistica sulle disponibilita alimentari della popolazione italiana, Annali di Statistica, Serie VII, Vol. 3, Rome, 1939. Leading study of pre-war consumption in Italy.

Office of Strategic Services, material in files and newspaper clippings used for estimates of present food position.

3. Regional Characteristics

Robertson, C. J. Agricultural regions of the north Italian plain, Geographical Review, Vol. 28, 1938, pp. 573-596. The statistics used to delineate the major agricultural regions of the north Italian plain were taken from the Catasto Agrario, but have been analyzed, simplified, and presented largely in map form.

Sion, Jules. Italie. Géographie Universelle, Vol. 7. Méditerranée: Peninsules Méditerranéennes, Part 3, pp. 235-394. An excellent brief study of regional characteristics of Italy.

Marescalchi, Arturo and Visintin, Luigi. Atlante agricolo dell'Italia fascista, Novara, 1935. A useful and handy volume containing a large

number of maps of all phases of agriculture.

Dainelli, Giotto. Atlante fisico – economico d'Italia, Milan, 1940. Probably the best single source of economic maps of Italy, including all phases of agriculture. The mapping unit used for most of the agricultural map is the small agricultural district of the Catasto Agrario.

I.S.T.D./C/237. I.S.T.D. "C" Reports on Northern Italy – Topography, 1 Sept. 1943. Contains much topographic information of vital importance to agriculture.

4. Distribution

Office of Strategic Services, Research and Analysis Branch, Report No. 1371, Food Distribution in Italy, 27 October 1943.

Office of Economic Warfare, Blockade and Supply Branch, Reoccupation Division, in cooperation with Enemy Branch, Distribution of Consumer Goods in Italy, October 1943.

Ministry of Economic Warfare, Food Rationing in Italy, 8 March 1943.

Office of Price Administration, Foreign Information Branch, Wartime Control of Supply and Distribution in Italy, July 1943.

5. Processing

Italia, Istituto Centrale di Statistica del Regno. Censimento Industriale e Commerciale 1937-40. Standard statistical data given by compartments and provinces.

Ibid. Monografia #2, Le Industrie del Malto, della Birra, e delgi Estratti di Malto. August 1937. A special study based on census statistics. Probably a number of similar studies will be available in Italy.

Annuario Statistico Italiano. A less detailed statistical study of value principally for quick reference.

Office of Strategic Services, Research and Analysis Branch, Report No. 1370, Food Processing in Italy, 15 October 1943.

6. United Nations Program

Office of Strategic Services, Research and Analysis Branch, Report #1371, Food Distribution in Italy, 27 October 1943.

Department of State, Office of Foreign Relief and Rehabilitation Operations, Preliminary Draft of a Program for Relief Operations in Italy, 8 September 1943.